Biola School of Missionary Medicine
558 South Hope Street, Room 1014
Los Angeles 17, California

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 85, NO. 1 CHICAGO, ILLINOIS JULY 4, 1925

CONSERVATION OF TESTIS IN REPAIR OF HERNIA COMPLICATED BY UNDESCENDED TESTIS *

ARTHUR GOETSCH, M.D.
BROOKLYN

An extensive review of the literature on undescended testis and a study of a small personal series of operative cases in the light of impressions gained have indicated that while much is known concerning the etiology, physiology, behavior and fate of the undescended testis, extensive generalizations are to be made with caution and final results in the individual case are hard to foretell.

The matter of etiology is very obscure and speculative and need not concern us at present. In the matter of pathology, the undescended testis furnishes equally unconvincing data. In general, it seems established that the abnormally placed testis may be normal or less than normal in size and consistency; rarely it is larger than normal. Spontaneous atrophy is said to be encountered more often after puberty than in childhood. Astley Cooper stated that all cryptorchids had loss of reproductive power, whereupon one of his pupils, a cryptorchid, committed suicide. Histologic examination showed evidence of spermatogenesis in both testes. However, in cases of bilaterally retained testes, the powers of reproduction are said to be markedly impaired and often entirely gone. When histologic changes have been observed in the retained testis, they have usually consisted in more or less atrophy and degeneration of the epithelial elements and a marked increase in the interstitial cells of Leydig, which are said to have an important influence in developing the secondary male characteristics.

The increased tendency of the undescended testis to become malignant does not seem proved in spite of the older teachings. Thus, in sixty-two cases of abnormally placed testis, Büdinger found only one case of malignancy, and during the same period he noticed eight cases in normally placed testes. In 1923, Tanner reported a case of bilateral teratoma testis of a carcinomatous type in a person with normally descended testes, and in 1915, Coley cited a case of bilateral abdominal malignant testes. Eccles reported the occurrence of maldescent of the testis 854 times in the examination of 74,800 patients with hernia; yet, in the entire series there was not a single case of malignancy. Also in forty cases of sarcoma of the testis observed during a period of twenty-five years previous to 1919, Cunningham had never seen a case of malignancy develop in an undescended testis. However, since that time (i. e., up to 1924), he had seen four cases and hence could make no logical deductions. Hinman emphasizes the susceptibility of the abnormally descended testis to malignancy and urges the necessity of operative intervention before puberty.

It would seem difficult to prove that malposition as such has any bearing on the development of malignancy; however, the undescended testis, particularly when resting in the inguinal canal or near the external ring, may present theoretical predisposition. Thus, it is constantly exposed to repeated trauma, irritation and pressure which could well in themselves tend to atrophy and which, unrelieved, might even predispose to malignant degeneration, just as chronic irritation unrelieved is apt to provoke malignancy eleswhere. The associated hernia for similar reasons may be a factor. Figures, it seems, have been cited to prove or disprove various contentions; whatever the truth may be regarding the tendency of the undescended testis to become malignant, the important point from the surgical standpoint is whether or not mobilization and replacement lessen any possible predisposition to malignant degeneration. Concerning this matter, there is no evidence that the testis which has been placed in the scrotum is unusually subject to the development of new growths. On the contrary, one is impressed with the rarity of malignant changes that have been noticed after the testis has been properly placed.

The problem of undescended testis is made easier by a brief reference to the anatomy involved.* During fetal life an evagination of peritoneum, the processus vaginalis, is projected into the inguinal canal. The testis gradually descends from its original position below the kidney and migrates through the inguinal canal into the lower limits of the scrotal pouch, where it is held at birth or shortly after by the gubernaculum testis. With the complete descent of the testis, the processus vaginalis fuses throughout its inguinal and scrotal portion excepting at the lower end, where it forms the tunica vaginalis testis. Complete fusion of the process occurs only when complete descent of the testis has taken place. Hence, a congenital hernial sac is practically always found in association with a true undescended testis. It is obvious that the testis might be held anywhere between its original abdominal position and its lower scrotal destination. Thus, it may remain in the abdomen at the internal ring, in the inguinal canal or below the external ring. In some instances, aberrant fibers of the gubernaculum may be responsible for its position in the perineum, in the crural region or above the external oblique muscle (ectopia testis).

Up to 1898, when Bevan first described his very satisfactory operation for undescended testis, most patients

* Read before the Clinical Society of the Long Island College Hospital, April 15, 1925.

were advised against operation owing to the generally poor results that followed failure to obtain satisfactory mobility and replacement of the testis. It was generally accepted that the undescended testis lacked the power of spermatogenesis and was ultimately destined either to complete atrophy or to malignant degeneration. Hence, more often than not it was sacrificed, especially as this procedure was said to render the accompanying hernia easier to repair.

Sacrifice of the testis is advocated in some rather recent reports. Thus, for example, the 1924 edition of Rose and Carless states: "Taking into consideration the discomfort occasioned by the condition as well as the risk arising from the tendency to malignant disease, there can be little doubt that the best method of treatment is the removal of the testicle." The practice has been rather general until comparatively recently, it seems from published reports.

Bevan's operation aims to secure a viable testis in the scrotal cavity and a repair of the associated hernia.

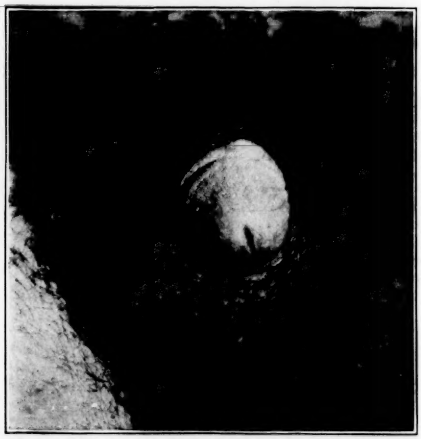


Fig. 1.—Medical student, aged 22. Operation, March 21, 1924. Release of inguinally placed, slightly undersized right testis without sacrifice of spermatic circulation. Appearance, April 2, 1925: Testis normal in size and consistency and well down in reconstructed scrotal pouch. Neurotic symptoms entirely relieved.

It is based on the premise that the two main arteries of supply to the testis, the artery to the vas deferens and the internal spermatic artery, anastomose freely, and that it has been shown in the operation for varicocele and by laboratory experiments that either one may be ligated without interfering with the function and nutrition of the testis. Opposed to these assumptions are the findings of Koyamo and others, who found experimentally that ligation of the internal spermatic artery in dogs is often followed by a certain amount of degeneration of the parenchymatous elements. Likewise, reports by Mixter and others would indicate that while it is possible to cut the spermatic circulation and still maintain the viability of the testis, this can be done only with risk of subsequent atrophy in some cases.

In my own small series of seven cases, the principles of Bevan have been followed. The usual inguinal hernial incision is made, the inguinal canal is exposed and the vaginal pouch is located and freed. The sac is incised high up and the testis is usually located without difficulty. The vaginal process of peritoneum is then divided just below the internal ring and well above the testis. The neck is carefully freed from the underlying cord and its structures, and ligated high up as in the ordinary herniotomy. The remainder of the peritoneum is then freed from the cord, and by this procedure more and more mobility is developed. Small fibrous bands about the internal ring or within the cord itself are further freed and cut and usually produce complete and satisfactory mobility. In exceptional cases, the spermatic vessels are found unusually shortened and must be divided to obtain adequate mobility, as suggested by Bevan. Finally, a pouch for the testis is prepared in the collapsed scrotum by blunt digital dissection. The testis is then placed in the newly formed scrotal cavity, where it should be free from even light tension. The inguinal region is closed as in any ordinary hernial repair, without cord transplantation.[1]

TABLE 1.—*Preoperative Data*

	No. of Cases
Patients operated on	7
Age at time of operation:	
7 years and under	3
18 years and above	4
Right testis involved	6
Left testis involved	1
Associated hernia present	7
Complications:	
Torsion of the cord requiring emergency operation	1
Strangulated hernia requiring emergency operation	1
History of strangulation	1
Evidences of malignancy	0
Neurotic manifestations	4

TABLE 2.—*Operative Data*

	No. of Cases
Testis conserved	7
Herniotomy performed	7
Evidences of malignancy	0
Position and condition of testis:	
(*a*) Inguinal position	5
Slight atrophy (before puberty)	3
Slight atrophy (after puberty)	1
Marked atrophy (after puberty)	1
(*b*) Intra-abdominal position	2
Postpuberty cases (no atrophy)	2
Bevan operation performed:	
Without sacrifice of the spermatic circulation	5
With sacrifice of the spermatic circulation	2
Position of testis at end of operation:	
Midscrotal	4
Low scrotal	3

TABLE 3.—*"Follow-Up" Data*

	No. of Cases
Evidences of recurrent hernia	0
Evidences of malignancy	0
Position of testis (4 months to 3½ years after operation):	
Midscrotal	1
Low scrotal	5
High scrotal	1
Size of testis:	
(*a*) Slight atrophy following the Bevan operation with sacrifice of spermatic circulation	2
(*b*) No change or slight increase following the Bevan operation without sacrifice of the spermatic circulation	4
(*c*) Marked increase following the Bevan operation without sacrifice of the spermatic circulation	1
Neurotic manifestations relieved (postpuberty cases)	4

1. A full description with illustrations of the steps in the operation can be found in the article by Bevan in Chapter LXI, Volume IV, of Keen's Surgery.

The important facts concerning the seven cases studied are given in the accompanying tables.

COMMENT

In a series of seven cases of undescended testis, malignant change was not encountered.

Slight atrophy was quite generally noted, regardless of age, when the testis occupied an inguinal position.

Fig. 2.—Italian laborer, aged 37. Previous unsuccessful operation elsewhere. Operation, Nov. 17, 1924. Release of badly scarred and markedly atrophic left testis from inguinal region without sacrifice of spermatic circulation. Appearance, April 2, 1925: Testis in midscrotal position showed marked increase in size and consistency. Neurotic symptoms entirely relieved.

It is interesting that atrophy was not present in the two postpuberty cases in which the testis occupied an intra-abdominal position.

Replacement in the scrotal cavity seemed to exert a generally beneficial influence on the size and consistency of the testis in all patients excepting two, aged 7 and 18 years, respectively, in whom the spermatic circulation had been sacrificed and slight atrophy ensued. Enough time has not yet elapsed to determine whether the changes will be permanent. An unusual increase in size followed in one patient, aged 37, in whom previous attempt at reduction at another hospital had failed completely. In this case, it was possible to liberate a markedly atrophic and badly scarred left testis from its inguinal position and replace it in the scrotum. In the course of four months, the testis had practically regained its normal size and consistency.

The association of hernia with the undescended testis was present in all cases and herniotomy was performed in every instance without sacrifice of the testis. The series, though small, emphasizes the dangers that are lurking in a patient with undescended testis. Thus, strangulated hernia and torsion of the cord, respectively, occurred in two postpuberty cases, while there was a history of strangulation in one prepuberty case.

Neurotic manifestations ranging from slight worry and mild depression to symptoms approaching frank sexual neuroses were present in all the postpuberty cases before operation. These were promptly relieved by operation.

A few of the more striking cases are presented in the accompanying illustrations.

SUMMARY

The tendency of the undescended testis to become malignant is overestimated. When the accompanying theoretical factors of pressure and unrelieved irritation persist, the abnormally placed testis may atrophy and degenerate, but malposition in itself is probably not the factor that produces atrophy or malignancy. Certainly, there is no evidence to show that a previously undescended testis that has been properly placed has any greater malignant potentialities than the testis that has always had a normal position.

Undescended testis is, by virtue of the anatomy involved, practically always accompanied by a congenital hernia. This fact predisposes to serious life-endangering complications, such as strangulated hernia and torsion of the cord.

Careless and indiscriminate sacrifice of the undescended testis is not warranted, since the vast majority of improperly placed testes, including the abdominal ones, can be brought down satisfactorily and therefore do not interfere with a proper hernial repair. In a limited number of cases, and if otherwise impossible to mobilize, it is justified to sacrifice the spermatic circulation to obtain satisfactory mobilization. When this is done, there is an appreciable risk of atrophy of varying degree.

Even the atrophic testis with questionable spermatogenic function should be conserved for the influence

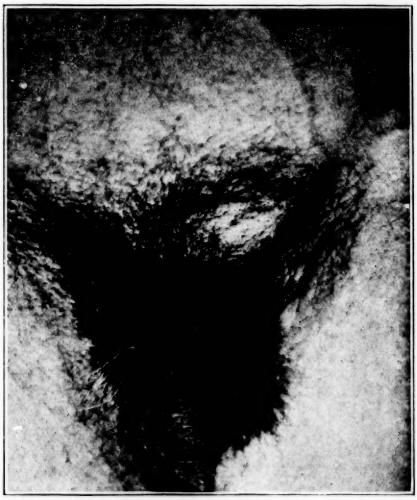


Fig. 3.—Nonoperative case. Syrian, aged 68. Left inguinally placed testis has undergone a marked atrophy from constant exposure to pressure and trauma until at present it is no larger than an ordinary almond. The atrophy is not apparent on inspection on account of the associated hernia.

it may exert on the development of the secondary sex characteristics. Furthermore, continued nutrition and development of any testis, whether normal or atrophic, is doubtless best favored by placing it in a position as nearly normal as possible.

Operative intervention should be recommended before puberty to facilitate normal physiologic development. Besides, when the operation is undertaken relatively early, serious complications are less likely to occur.

In postpuberty cases, the same general principles governing in the prepuberty cases hold. Furthermore, the testis should be brought down for the stabilizing influence and moral effect that knowledge of its presence in the reconstructed scrotal cavity has on the patient with an associated neurosis. This indication is further emphasized when one considers the increased efforts that are being made experimentally and clinically in the way of gonadal transplants, both animal and human, none of which have yet produced results comparable to those of the reclaimed undescended testis.

Finally, it is at all times considered good surgical judgment and treatment to conserve as much of the structure and function of an organ as is compatible with the welfare and safety of the patient.

2 Sidney Place.

CYSTINURIC LITHIASIS

S. J. SEEGER, M.D.
AND
W. M. KEARNS, M.D.
MILWAUKEE

One hundred and fifteen years ago, Wollaston[1] gave the first description of cystin. He identified a bladder stone as being composed of a protein derivative which differed essentially from the ordinary urinary stones composed of crystalline salts. His original description

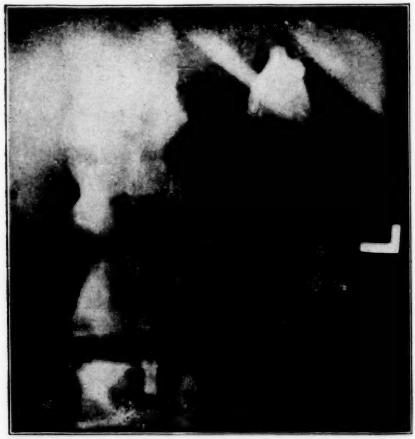


Fig. 1.—Left kidney region: stones in pelvis. The shadow of the largest stone, in view of its size, is of relatively slight density. This stone, on analysis, proved to consist largely of cystin.

applies very becomingly to the specimen that was obtained in this case. He said, in part:

> In appearance these calculi resemble more nearly the triple phosphate of magnesia than any other calculi, but they are more compact than that compound is usually found to be, not consisting of distinct laminae, but appearing as one mass confusedly crystallized throughout its substance. . . . These crystals have a yellowish semitransparency; and they have also a peculiar glistening luster like that of a body having a high refractive density.

Since Wollaston's discovery in 1810, there have been only 181 cases of cystinuria reported, 124 of which were

Fig. 2.—Ureteropyelograms locating shadows in kidney pelvis and demonstrating the large cystin stone contrasting with the 15 per cent. sodium iodid solution, owing to its lesser density.

complicated with stone formation. Among 600 cases of urinary calculi observed by Nakano,[2] in Japan, cystin calculi were present in seven cases. From these data one would deduce that it is an exceedingly rare condition, but in reality it has a much higher incidence, as many cases that are symptomless are overlooked. Even when complicated with stone, they are not always recognized by urinalysis. The appearance of the stone may be disguised because of mixture of other deposits, and again, their resemblance to the commoner triple phosphate concretions may be confusing. Cystin is present much more frequently in the urine and calculi of dogs than of man.

Cystin is the only sulphur-containing amino-acid. It is present in the protein of most of our foods and occurs in considerable amounts in eggs. It is present in a high percentage in keratin and keratin-containing substances, such as hair, horn, nails and shells.

Cystin appears in the form of hexagonal leaves or rhombic crystals. It is levorotatory. It is insoluble in water and alcohol. It is soluble in concentrated mineral acids, but is much more readily soluble in alkalis.

ETIOLOGY

Stadthagen and Brieger[3] have advanced the theory that cystinuria is due to infection. They believe that the coincidence of cystinuria and constipation favor this theory. Wasserthal[4] noted frequent association of articular rheumatism and cystinuria, and suggested infection as the cause of both. Ebstein[5] treated a

1. Wollaston, W. H.: On Cystin Oxide: A New Species of Urinary Calculus, Phil. Tr., 1910, pp. 223-230.

2. Nakano, H.: Atlas der Harnsteine, Leipzig, F. Beutiche, 1925, pp. 5, 6.

3. Stadthagen, M., and Brieger, L.: Ueber Cystinurie, nebst Bemerkungen ueber einen Fall von Morbus maculosus werlhofii, Berl. klin. Wchnschr. **26**: 334-347, 1889.

4. Wasserthal: Beitrag zur Kasuistik und Aetiologie der Cystinurie, Centralbl. f. Harn- und Sexualorgane **15**: 121-131, 1904.

5. Ebstein, W.: Ein Paar neuer Fälle von Cystinurie, Deutsch. Arch. f. klin. Med. **23**: 138-151, 1879; Ein Fall von Cystinurie, ibid. **30**: 594-602, 1881-1882.

syphilitic patient with mercury and caused a disappearance of cystinuria. Beer [6] noted a case of cystin-nephrolithiasis in which there was a colon bacillemia. On the other hand, the infectious theory is held to be incompatible with the fact that cystinuria lasts for a lifetime

Kahn and Rosenbloom[7] give a very fascinating account of the development of our knowledge of the chemistry and metabolism of cystin, which reflects the great interest in the subject during recent years. Cystin is a product of catabolism, but it does not appear in the urine as such, being normally broken down to its sulphur derivatives. It is derived both from endogenous and exogenous protein.

It is not known in which organ the error in metabolism responsible for cystinuria takes place. The liver has been accused of being the seat of this incomplete metabolism, and to substantiate this theory, it has been pointed out that cystinuria accompanies cases of phosphorus poisoning and alcoholism. Cystin was found in the blood by Müller [8] in a patient who had attacks of renal colic and passed small cystin calculi. This patient suffered with a "stubborn urticaria from December, 1902, to February, 1903." A cystin crystal was found in the blood during this period, and the presence of this abnormal constituent was given as the probable cause of the urticaria. Other investigators have identified cystin in the liver, spleen and muscle.

Neuberg [9] places cystinuria in three groups: (1) the mild type, in which there is a tolerance for tyrosin, cystin and asparagenic acid; (2) the type in which cystin is excreted and there is present diminished power to oxidize other amino-acids on feeding; (3) the type of cases in which the disturbance of the intermediate protein metabolism is so advanced that besides the excretion of cystin, other amino-acids are spontaneously excreted, such as tyrosin and leucin.

That cystinuria is due to some defect in the intermediary metabolism of amino-acid is shown by the fact that van Amstel [10] has described a case of alkaptonuria and cystinuria in one patient. At times, various diamins are associated with cystin in the urine. Some of the basic nitrogenous substances known as ptomains, putrescin and cadaverin, have been isolated in the urine and feces of cystinuric patients.

Folin and Alsburg [11] fed patients cystin prepared from their own urine and found that it was not excreted in the urine. The cystin excreted in the urine is evidently not absorbed as such from the intestine, but must be absorbed in the form of a larger molecule, because cystin absorbed as such is oxidized. Bauman and Preusse and Jaffe [12] have produced artificial cystinuria by feeding the halogen compounds of benzene together with ethylcystin.

Heredity is a decidedly important factor. In Niemann's [13] series there were three pairs of brothers and one pair of sisters. Kretschmer's [14] patients were twin brothers. A number of authors have reported the occurrence of familial cystinuria, among them Marcet,[15] Civiale,[16] Toel,[17] Lenoir,[18] J. Cohn,[19] Strasser,[20] Teall,[21] E. Pfeiffer,[22] Lichtenstein,[23] Harnier,[24] Winternitz [25] and Southam.[26] The most striking report is that of Abderhalden,[27] which included five children in one family. One, a boy, aged 21½ months, died of inanition, and necropsy revealed all the organs infiltrated with numberless white points. In an examination of the spleen, these points were identified as cystin. Another child, a girl, aged 9½ months, and a third, a boy, aged 17 months, died in a similar manner. Two other children, boys, are living and have cystinuria. The urine of the mother contained no cystin. The urine of the paternal grandmother was free from

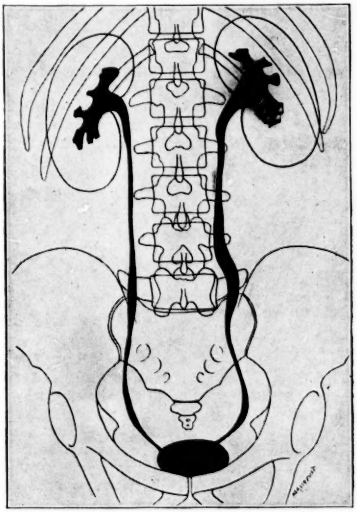


Fig. 3.—Exact tracing of right and left ureteropyelograms with the stones mounted and grouped as in vivo. The right side, free from stones, has a normal filling. The left pelvis is full of stones, and there is evidence of obstruction in the dilated middle third of the ureter. This stricture in the lower ureter and its consequent stasis is a predisposing factor in the formation of stones in the kidney pelvis.

cystin. The urine of the father contained a considerable amount of cystin, as did that of the paternal

6. Beer, E.: Cystin Nephrolithiasis; Colon Bacillemia, Internat. J. Surg. **33**: 219-221, 1920.
7. Kahn, Max; and Rosenbloom, Jacob: Cystinuria, Endocrinology and Metabolism, New York, D. Appleton & Co. **4**: 515-539, 1922.
8. Müller, A.: Ueber Cystinurie und Cystinsteine, Wien. med. Wchnschr. **61**: 2364-2369, 2488-2492, 1911.
9. Neuberg, C., and Meyer, P.: Ueber Cystein, Ztschr. f. physiol. Chem. **44**: 472-497, 1905.
10. Van Amstel, P.: Zystinurie, Alkaptonurie, Ochronose, Sammlung klin. Vortr. Inn. Med., 1910, Nos. 176-178.
11. Alsburg, C. L., and Folin, Otto: Protein Metabolism in Cystinuria, Am. J. Physiol. **14**: 54-72, 1905.
12. Bauman, Preusse and Jaffe, quoted by Kahn and Rosenbloom (Footnote 7).
13. Niemann, A.: Beitrag zur Lehre von der Cystinurie bei Menschen, Deutsch. f. klin. Med. **18**: 232-263, 1876; Beitrag zur Lehre von der Cystinurie beim Menschen, Ann. d. Chem. u. Pharm. **187**: 101, 1877.
14. Kretschmer, H. L.: Cystinuria and Cystin Stones, with a Report of a New Family of Cystinurics, Urol. & Cutan. Rev. **20**: 1-10, 1916.
15. Marcet, A.: An Essay on the Chemical History and Medical Treatment of Calculus Disorders, Ed. 2, London, Longmans, Greene & Co. **1**: 181, 1817.
16. Civiale, J.: Mémoire sur les calculs cystine, Compt. rend. Acad. d. sc. **6**: 897-898, 1838.
17. Toel, F.: Beobachtungen über cystinbildung, Liebig's Annalen **96**: 247-251, 1855.
18. Lenoir, quoted by Civiale, J.: Medical Treatment of Stone, Philadelphia, 1841, p. 452.
19. Cohn, J.: Ueber familiäre Cystinurie, Berl. klin. Wchnschr. **36**: 503-504, 1899.
20. Strasser, quoted by Brik: Mitt. d. Ges. f. inn. Med. Wien., March 6, 1902.
21. Teall, quoted by Müller (Footnote 8).
22. Pfeiffer, E.: 4 Fälle von Cystinurie bei 4 Geschwestern, Malay's Jahresb. **24**: 632, 1894; Centrallbl. f. d. Krank. d. Harns und d. Sexual Org. **5**: 187-189, 1894; Eine neue Cystin Familie, ibid. **8**: 173-178, 1897.
23. Lichtenstein, R.: Ein Fall von Zystinurie und Konkrementbildung in der rechten Niere, durch Operation geheilt, Wien. klin. Wchnschr. **16**: 544-545, 1903.
24. Harnier, W., quoted by Neubauer, E., and Vogel, J.: Analyze des Harnes, ed. by Huppert, Wiesbaden, **1**: 486, 1898.
25. Winternitz: Prag. med. Wchnschr. **35**: 64, 1910.
26. Southam, F. A.: Notes on a Case of Cystin Calculus Diagnosed Before Operation, Brit. M. J. **2**: 817-818, 1876; Two Cases of Cystin Calculi, ibid. **1**: 489-490, 1907.
27. Abderhalden, E.: Familiäre Cystindiathese, Ztschr. f. physiol. Chem. **38**: 557-561, 1903.

grandfather. Abderhalden states that there was a history of tuberculosis and gastro-intestinal disease on the paternal side of the family.

Males are more frequently affected than females. Niemann collected reports of forty-nine cases from the literature up to 1876. There were thirty-eight males and ten females; in one case the sex was not stated. Kretschmer collected reports of 106 cases up to 1916. There were sixty-five males and twenty-seven females; in fourteen cases the sex was not stated.

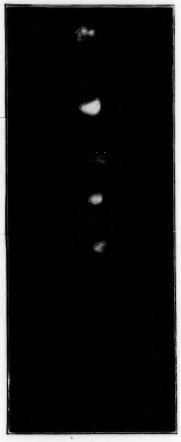


Fig. 4. — Roentgenographic appearance of some of the smaller stones after removal: The one at the top is largely cystin; the lower ones, while smaller, cast a better shadow because of a higher content of calcium salts.

There seems to be no predilection in regard to age. The condition is apt to develop at any time. Whether it is ever present at birth is not known. Manby [28] reported the youngest case in an infant, aged only 12 months, who passed a small cystin stone. Sir Henry Thompson [29] observed the oldest case in a man, aged 84.

DIAGNOSIS

The diagnosis rests in the identification of cystin in the urine. This finding, together with the demonstration of stone anywhere in the urinary tract, leads to a diagnosis of cystin calculi. The finding of stones is simple if they are impure; if the stones are pure cystin, they are more difficult to demonstrate with the roentgen ray because of their relatively low density. The urine is usually acid, but may be neutral or even alkaline. The degree of alkalinity required for solution of cystin varies in different urines. The urine that contains cystin, if allowed to stand, gives off a sulphurous odor due to bacterial decomposition of the cystin. In the sediment the crystals appear as six sided plates of variable size, with three pairs of parallel sides and very frequently a notch in one side. The addition of a drop of ammonia brings about solution quickly. On evaporation, or on the addition of acetic acid, the crystals reprecipitate.

TREATMENT

The same principles of treatment as applied to calculi in general are applied to cystin calculi, and while these stones are more apt to recur, prevention is possible if proper measures are carried out. Removal of infection, both local and distant foci, copious water intake, and establishing free drainage especially by the dilation of the ureteral strictures and removal of obstruction in the lower urinary tract must be accomplished. Litholapaxy is feasible in cases of bladder stone. Kretschmer successfully crushed a large cystin bladder stone in one case, and three smaller stones in another, within the course of a year. Other instances in which the procedure has been successfully carried out have been reported. Added to these measures, restriction of protein and the administration of alkalis are indicated.

28. Manby, F. E.: Cystine, Brit. M. J. **1**: 58, 1875.
29. Thompson, Henry: Tr. Path. Soc. London **21**: 272, 1870.

Klemperer and Jacoby [30] were the first to advise alkali treatment for cystinuria. They found that on a test diet the proportion of cystin in the urine became much reduced when the patient refrained from protein in the food. The amount also decreased remarkably by the administration of from 6 to 10 gm. daily of sodium bicarbonate. Smillie noted that a patient on a nitrogen intake of 10 gm. a day required more sodium bicarbonate to keep the urine free from cystin than is well borne by the stomach. The administration of alkalis does not prevent its formation, but merely makes it soluble in the urine. The only reliable test for determining the absence of cystin from the urine is the microscopic test of the sediment.

To Crowell [31] belongs the credit for bringing about the first successful disappearance of cystin nephrolithiasis by alkaline treatment. During the period from January, 1922, to June, 1923, he caused a dissolution of bilateral renal calculi by oral administration of alkalis and pelvic lavage with 1 per cent. solution of mercurochrome-220 soluble, as proved by successive roentgenograms.

In a case of cystinuria uncomplicated with stones, or one in which stone has been removed and all the other predisposing factors mentioned previously have been eliminated, the preventive treatment should consist in strict limitation of protein intake, moderate doses of alkalis, and a copious water intake.

REPORT OF CASE

A high school boy, aged 16, who entered Milwaukee Hospital, Feb. 26, 1925, in the service of Dr. Seeger, referred by Dr. Hausmann of Kewaskum, Wis., was acutely ill with pain in the right lumbar region. The diagnosis apparently rested between appendicitis and renal colic.

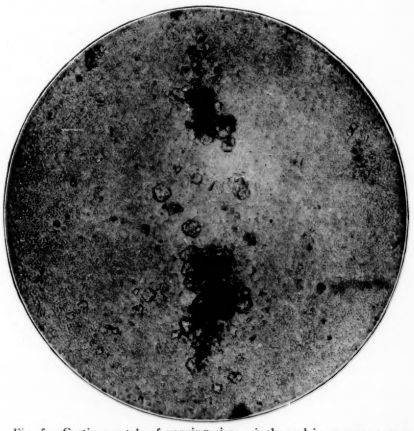


Fig. 5.—Cystin crystals of varying sizes, singly and in groups, appearing in urinary sediment; reduced from a photomicrograph with a magnification of 900 diameters.

The family and personal history were irrelevant except that a maternal uncle had had a kidney stone removed three years before. The patient was of the blond, blue-eyed type. One

30. Klemperer, G., and Jacoby, M.: Zur Behandlung der Cystinurie, Therap. d. Gegenw. **55**: 101-103 (March) 1914; abstr., J. A. M. A. **62**: 1207 (April 11) 1914.
31. Crowell, A. J.: Cystin Nephrolithiasis: Report of a Case with Roentgenographic Demonstration of Disintegration of Stone by Alkalization, Surg., Gynec. & Obst. **38**: 87-91 (Jan.) 1924.

year before he had had an attack of severe left lumbar pain, lasting two days.

The patient was awakened at 2 a. m. on the day of admittance with severe pain in the right lumbar region. There were nausea, vomiting and slight fever. The pain lasted until 7 a. m., when a hypodermic of morphin was given. Three hours later on arrival at the hospital, the leukocyte count was 18,550. There was moderate rigidity and tenderness over the right lower quadrant of the abdomen. Urinalysis showed albumin and a large number of red blood cells.

The following day, the patient was referred to the urologic service of Dr. E. A. Fletcher. The right lumbar pain did not return, the fever was absent, and the leukocyte count dropped to 10,850. The symptoms no doubt were due to the passage of gravel from the right ureter. Roentgenograms demonstrated nothing on the right side, but a cluster of stones in the region of the left pelvis. There was one large shadow of rather slight density and a number of smaller ones. The urinalysis showed albumin, red blood cells, colon bacilli and large numbers of cystin crystals. These findings led to a diagnosis of cystin calculi.

Ureteral catheterization, on both sides, revealed a urine containing a few red blood cells. There was also slightly impaired function on both sides. On the right side, the impairment of function was probably due to the recent renal colic. A pyelogram on the left located the stones filling the pelvis and lower calices. The ureter showed considerable dilatation in its middle third, suggesting a long standing obstruction probably due to stricture. At a later sitting, a pyelogram done on the right was entirely normal. The blood sugar estimation was 75 mg.; the nonprotein nitrogen, 32.7 mg.; the urea nitrogen, 18.5 mg.; the creatinin, 1.7 mg., and the uric acid, 3.72 mg. Urine from both kidneys showed *B. coli*.

March 3, Dr. Seeger removed the stones from the kidney by a posterior pyelotomy. Recovery was uneventful.

For three days following operation, no cystin appeared in the urine. Then the patient went on the regular hospital diet, and cystin reappeared in the urine. Ten grain (0.65 gm.) doses of sodium bicarbonate were administered every three hours, and the urine showed only an occasional cystin crystal.

Eighteen days after operation, the patient left the hospital with directions to take sufficient sodium bicarbonate and citrocarbonate to keep the urine alkaline to litmus paper, to drink from eight to ten glasses of water a day, and to refrain from eggs, meat and cheese.

The urine has been examined in six members of the family, including the maternal grandfather, the father, the mother, two sisters and a brother; no cystin has been found. The urine of the father and the brother contained red blood cells on two occasions.

April 20, 1925, the patient returned for examination. He had gained 20 pounds (9 kg.), had no pain, and felt very well. The urine was alkaline in reaction, but contained large numbers of cystin crystals.

Ureteral catheterization showed a few pus cells and a few *B. coli* on each side. The comparative function on the two sides, as measured by the phenolsulphonephthalein and urea excretion, was about 40 per cent. better on the normal right side. A number 12 wax bulb passed up the left ureter was obstructed 4 cm. from the bladder. Roentgenograms were negative.

SUMMARY

1. Cystinuria is an error of metabolism which is inborn and incurable.

2. This case of cystinuria was complicated with calculi. The calculi were multiple and mixed with other salts.

3. After operative removal of the stones, the cystinuria persists in this case, even in a urine alkaline to litmus, emphasizing the necessity of the microscopic test to determine the absence of cystin in the urine.

4. No other members of the family have been found to be affected by cystinuria, although the father and a brother had microscopic blood in the urinary sediment on two occasions.

1310 Wells Building—128 Wisconsin Street.

SINUSITIS AND SWIMMING

FURTHER OBSERVATIONS OF ETIOLOGIC FACTORS, WITH SPECIAL EMPHASIS ON MAN'S LACK OF ADAPTATION TO AQUATIC HABITS *

H. MARSHALL TAYLOR, M.D.
JACKSONVILLE, FLA.

In recent years, the advances in medicine along bacteriologic and immunologic lines have opened up such tremendous fields for research that they have to some extent overshadowed some other branches of medicine of paramount importance and tended to relegate them to the background. Biology, the fundamental study of all phenomena of life and its manifold relations, is one of the branches of science that cannot be ignored. We must always bear in mind, as Dendy [1] has said, "Man derives his existence from the same ultimate sources and is subject to the same natural laws as all the other living things with which he shares the earth."

The literature dealing with the subject of infections of the upper respiratory passages caused by swimming has to a large extent ignored the fact that man has few structural adaptations for an aquatic environment, but has in a large measure dealt with only the one etiologic factor, that of contaminated water.

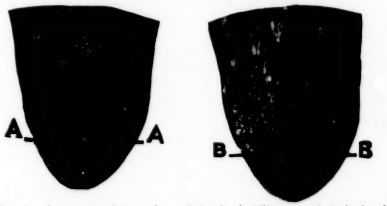


Fig. 1.—Anterosuperior portion of head of Alligator mississippiensis: *A, A*, external nares open as during respiration; *B, B*, nares closed.

My interest in other causative factors of sinusitis from swimming increased in the last few summers when I learned that the only pool a number of my patients had been patronizing was fed by a spring having a flow of 3,000 gallons a minute, while the only pool used by other patients had a flow of 30,000 gallons a minute. Chemicals, which are often alleged to be irritants to the nasal mucous membrane, were not used in either one of these pools on account of the low bacterial counts found after repeated examinations by the Florida State Board of Health. Bacterial examinations of samples collected from both of these pools on heavy bathing days did not show more than 150 bacteria per cubic centimeter, and showed no evidence of contamination. In other words, the patients coming under my observation bathed in relatively pure spring water, having a temperature of 71 F.

My purpose in mentioning these two pools, specifying the large amount and quality of water supplied and its relative degree of purity, is primarily to emphasize that factors other than contaminated water play a significant rôle.

* Read before the American Laryngological Association, Washington, D. C., May 5, 1925.

1. Dendy, A.: Outlines of Evolutionary Biology, 1913, p. 7.

Fenton [2] states that:

Swimmers and divers introduce the following factors which interfere with the protective mechanism of the nasal mucous membrane: Destructive action of plain water upon cells, by osmosis, drawing out saline elements, causing edema and acidosis of cells, loss of ciliary activity and eventual cell death. This "irritative action of water" causes lowered local resistance. The specific protective substance of the sinus secretion is diminished and eventually lost by being forcibly washed away and later inhibited by the edema and chemical degeneration of the secretory cells.

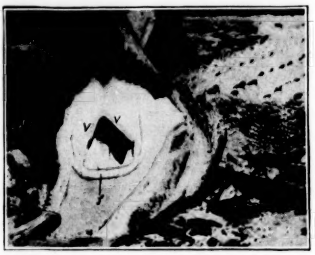


Fig. 2.—Interior of mouth of Alligator mississippiensis (after Reese): *f*, transverse fold at base of tongue; *v*, *v*, velum palatinum.

The experiences of others, as well as my own, have aroused my interest in etiologic factors other than contaminated water, one in particular: man's lack of adaptation to aquatic habits. My review of the subject has taken on many and varied aspects and has brought to light several questions that seem to me worthy of consideration. It is not my present purpose to set forth any new discoveries but merely to summarize certain structural adaptations found among the animals whose normal habitat is water, with a view toward a better understanding of the condition in man.

It has occurred to me that sinus infections, secondary to swimming, evidently come from one or both of the following sources: Either foreign bacteria may gain entrance to the deeper portions of the nasal apparatus and conjoined structures; or bacteria normally and constantly present in this region may be allowed, by a lowered resistance on the part of the individual, to multiply to pathologic proportions.

Keeping these possibilities in mind, another question arises which originally led me to the investigations that I will summarize in this paper. Why is man so susceptible to sinus diseases, while lower animals breathing air as man does and living constantly in the water do not encounter these difficulties? What have air-breathing aquatic animals to protect them from sinus infection which man is so likely to contract when he places himself in their normal environment and practices their activities?

PROTECTION OF RESPIRATORY STRUCTURES IN AQUATIC ANIMALS

The plan of respiration for all air-breathing animals is fundamentally the same, there being no essential difference in the epithelium lining their respiratory tracts. It is the usual stratiform flat epithelium lining the nasal vestibule which gradually assumes the structure of true respiratory mucous membrane; that is, the stratiform ciliated cylindric epithelium. The latter, a specialized type, is designed to keep moist the tracts through which a current of air is constantly passing, to warm the air, and to secrete a mucus which is inhibitory to bacterial growth or bactericidal, and in which the bacteria are enmeshed and are carried by the wavelike motion of the ciliated epithelium to the pharynx and esophagus to be disposed of.

We cannot look for the difference between man and the aquatic animals here. The difference lies in the fact that those animals which are highly modified to live in the water can at their will or involuntarily close the anterior nares and in this way protect their respiratory epithelium from the destructive action of the water.

Wiedersheim [3] says that the diving mammals are provided with a complicated musculature which forms a sphincter in connection with a special valvular apparatus for closing the nostrils.

Zoologists are far from knowing the anatomy and physiology of all animals; nor are they agreed on the relative importance of a great number of modifications of structures which animals present. The information I have gained on the comparative anatomy of aquatic animals, aside from personal observation, has been scattered through many books and periodicals, and I find also that there remains much yet to be ascertained.

Let us here review some of the anatomy of various animals that are modified for life in the water. For interest's sake we will start with the alligator, the highest form of reptilian life. The anatomic feature relevant to this paper is that the muscles of the anterior nares are so arranged as entirely to close the nostrils at the will of the animal, and this is always done when the head is submerged.

Also, according to Reese,[4] the posterior margin of the tongue of the alligator is elevated as a transverse fold that meets a corresponding fold, the velum palatinum from the lower side of the palate, and completely shuts off the mouth from the opening of the trachea and gullet. Also into this hinder chamber open the posterior nares, so that the animal can open its mouth under the water without water coming in contact with the respiratory mucous membrane. To test the efficiency of this means of protecting the nasal mucous membrane from water, I recently sectioned the head of an alligator immediately after submerging in an aqueous solution of methylene blue, and no evidence of staining of the respiratory mucous membrane could be detected.

Fig. 3.—Interior of mouth of Alligator mississippiensis: *A*, transverse fold at base of tongue in contact with velum palatinum as while submerged.

In the aquatic birds we find a wide variation in the means they have of protecting the respiratory mucous membrane, yet all are more or less on the same principle. For the following information on the aquatic birds I am indebted to Dr. Alex Whetmore of the United States National Museum, Washington.

The booby, a bird that dives from some distance above the water to catch its prey, has no external nostrils. Its

2. Fenton, R. A.: Ann. Otol., Rhinol. & Laryngol. **32**: 526 (June) 1923.

3. Wiedersheim, R.: Comparative Anatomy of Vertebrates, p. 265.
4. Reese, A. M.: The Alligator and Its Allies, 1915, p. 151.

tongue is small, elongated, and set up on a sort of narrow stalk. It can be plugged directly and tightly into the internal nares. The true opening of the trachea has a padded margin of muscle and connective tissue called the rima glottidis, which can be tightly closed. A crest or projection on the thyroid cartilages, itself cartilaginous, called the ligula laryngis, serves as a support for this valvular arrangement. The cormorant and the snake bird are similar. They have no external nostrils. The diving petrel has external nostrils, but they may be closed very tightly by an arrangement similar to that in the alligator. The penguin has very minute, hairlike slits for external nostrils, and arrangements in the glottis and internal nostrils similar to those of other birds. The frigate bird is rather transitional. It has a scale-like membrane entirely closing the external nostrils, but indicating that they were formerly open. Though the external nares of some of the aquatic birds cannot be closed, water, in no instance, in the species that I have reviewed, is allowed to come in contact with the parts lined by the respiratory epithelium.

In many of the mammalian groups there have arisen forms modified for life in the water in that they too have a musculature by which their nostrils are closed at the will of the animal and which protects their stratiform ciliated epithelium from water. This is true in the beaver, the hippopotamus, the seal, the walrus, the manatee and the dugong. This arrangement of the anterior nares we also find to exist in the cetaceans, which are modified to a higher degree to life in the water than are any other of the aquatic mammals.

From biology we learn that every species of animal life is adapted to its environment and that all its organs are fitted to its functions and all its functions to its environment. Now, let us briefly discuss man's adaptation for water. What has he, or has he anything that is homologous to the musculature aquatic mammals have for closing the nostrils and for keeping water from their nasal cavities and appurtenances? Eckley,[5] in describing the compressor narium of man, states it is "a small muscle rising from the superior maxilla and is inserted by an aponeurosis across the bridge of the nose into its fellow of the opposite side. . . . This is a small muscle at best and very hard to demonstrate." In describing its functions and that of the dilator naris anterior and dilator naris posterior, which oppose the compressor narium, he says, "By their action, they confer on the human face facial expression." These comparative anatomic features of the aquatic animals and man are in line with the assertions of the students of comparative anatomy and biology that man is now far, far removed from being an aquatic animal and has not the adaptation for an aquatic environment. Time will not permit a discussion of the phases of inheritance of acquired characteristics or of the degenerating effect of disuse on an organ.

It is well to recall here that when man assumed the upright position he also lost the gravity drainage of his maxillary and sphenoidal sinuses; which means that the drainage of these sinuses is solely dependent on the wavelike cilia of the ciliated epithelium. Hence the drainage of the sinuses of man is not as complete as it is in the aquatic animals, in whom the ostia are so situated that gravity drainage is a material factor.

It is not my purpose to describe the anatomy and physiology of the ear of the aquatic animals, but it is germane to our subject to refer briefly to some of their modifications to show how thoroughly Nature has endowed them with organs necessary for aquatic life, and also to note the conspicuous absence of these modifications in man. For instance, in the alligator, immediately behind the eye is a hinged cornified flap constituting an ear covering which is closed tightly as the reptile goes beneath the water, and this prevents water from coming in contact with the membrana tympani. An analogous modification, which has the same function, can be seen in other aquatic animals, for instance the beaver and the hippopotamus.

So far I have endeavored to show some of the adaptations of aquatic animals to the circumstances in which they live, particularly with reference to keeping water from gaining entrance to the nasal cavities,

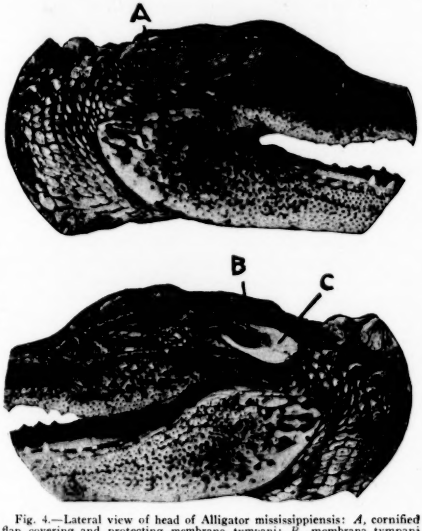


Fig. 4.—Lateral view of head of Alligator mississippiensis: *A*, cornified flap covering and protecting membrana tympani; *B*, membrana tympani exposed; *C*, area where cornified flap has been detached.

whereby infections might be introduced or else injury done to the respiratory epithelium that lines the true nasal cavity and the paranasal sinuses. It is evident that these adaptations are sufficient for their mode of living and are far superior to any means which man has for keeping water from the respiratory tract.

LOWERED RESISTANCE FROM CHILLING

This brings us to the second of the possible causative factors of sinusitis from swimming; that is, a lowered resistance, rendering the individual more susceptible to the pathogenic organisms normally harbored in the upper air passages.

The question of the duration of time one can remain in the water without reducing the body temperature and lowering one's resistance is a matter of paramount importance. We know that cold water has a veritable appetite for heat, and all authorities agree that prolonged cold baths cause a rapid loss of body heat.

5. Eckley, W. T.: Practical Anatomy, 1899, pp. 34-35.

We are all familiar with the investigations of Pasteur [6] and Durck,[7] who have found that chilling lowers resistance. Trommsdorf [8] has also shown that prolonged chilling of the body causes a decreased motility and phagocytic activity of the leukocytes. The work recently done by Mudd,[9] Grant and Goldman is also interesting in this connection. In an exhaustive study they have reported that chilling of the body surfaces causes a fall in the temperature of the nasal and pharyngeal mucous membrane, and conclude by saying that chilling of the nasal mucous membrane and change in vasomotor tone may so disturb the equilibrium between the host and the bacteria of the nose as to favor infection.

Last summer, I became interested in the question of lowered resistance from chilling, particularly in reference to sinusitis from swimming, and had the temperatures taken of 250 children under 13 years of age, both before and after they had been swimming for forty-five minutes in an indoor swimming pool with a water temperature of 73 F. Of the 250 children, only thirty maintained a normal temperature, while the other 220 showed a reduction of temperature, many as low as 95 F.

Now, let us briefly consider the adaptations which some of the warm blooded aquatic animals have for their environment and their means of maintaining their body temperature. For instance, the cetaceans. These mammals are the most highly adapted of any of the warm blooded animals for aquatic life. They live their entire lives in cold water, and many of them maintain a higher normal temperature than man. The function of keeping their bodies warm is performed by a thick layer of blubber, a nonconductive material, a dense kind of fat placed immediately beneath the integument. Other aquatic animals that live in cold climates, such as the seal, walrus and sea-lion, have a heavy coat of fur as well as the fatty layer. It all seems to point to the fact that they are highly adapted mechanically to their normal habitat, which even without natural physiologic immunity would adequately protect them.

Now let us see how evident it is that man is not so modified to maintain his normal temperature in water that is of a lower temperature than his own. Fox [10] states that in a bath with a temperature of 70 F. of from fifteen to twenty minutes' duration the loss of heat may be increased to fivefold that of the normal basal rate. In strong normal persons this loss of bodily heat does not result in immediate lowering of the body temperature, but if the bath is prolonged the production of heat fails to keep pace with the loss and the temperature of the body falls. This observation in itself is sufficient evidence of the fact that man is lacking in the adaptation to maintain his body temperature for more than a brief period in water temperature lower than his own.

SUMMARY

In the foregoing statements I have endeavored to show the modifications which the aquatic animals have for their environment and the striking absence of such adaptations in man. I have noted the means with which Nature has endowed the aquatic animals for preventing water from gaining entrance to the respiratory tract, the means they have of maintaining their body temperature in cold water, and the absence of these provisions in man.

CONCLUSION

Man is essentially a terrestrial being, and his anatomy and physiology are not modified for a water environment. When man is out of his normal sphere he must understand what limitations Nature has placed on him, and not ignore the fundamental laws that regulate his own being.

111 West Adams Street.

6. Pasteur, cited by William Dawson, in Allbut's System of Medicine, **2**, Part II.
7. Durck: Studien über die Aetiologie der Pneumonie, Arch. f. klin. Med., 1897.
8. Trommsdorf: Arch. f. Hyg. **59**: 1, 1906.
9. Mudd, S.; Goldman, A., and Grant, S.: Reaction of the Nasal Cavity and Postnasal Space to Chilling of the Body Surfaces, J. Exper. Med. **34**: 11 (July) 1921.
10. Fox, R. F.: The Influence of Heat and Cold upon the Human Body, J. Exper. Med. **44**: 353, 1915.

OBSTRUCTIVE ANURIA

REPORT OF A REMARKABLE CASE

W. A. MYERS, M.D.
KANSAS CITY, MO.

According to Ettmuller,[1] "there may be suppression of urine for ten or eleven days before death, sometimes they live to the fourteenth, seldom to the twentieth; but if there be large sweat they may survive longer." Sir William Roberts [2] states that the "duration of life for fifteen days is remarkable," while Ransohoff [3] believed that "death follows from uremia in five to twenty-five days, unless the obstruction is released spontaneously or by operation."

In an extensive survey of the literature, I have collected reports of nineteen cases of complete anuria with a duration of from twenty to twenty-nine days. There were two cases reported of twenty days;[4] five of twenty-one days;[5] one of twenty-two days;[6] two cases of twenty-three days;[7] one of twenty-four days;[8] two of twenty-five days;[9] three of twenty-seven days,[10] and three of twenty-eight days.[11] Among the fatalities of this list is the case of Gordon,[12] in which a patient operated on for a "cancer" of the kidney lived twenty-seven days, twelve hours "without secreting a drop of urine." Necropsy disclosed entire absence of the opposite kidney.

A certain number of cases have been collected with a duration in excess of thirty days: Farlow,[7] thirty-five days; Parr,[13] forty-two days; Gallina,[14] forty-two days;

1. Ettmuller, quoted by Allen, John: Synopsis of Medicine **1**: 351, 1749.
2. Roberts, William: Urinary and Renal Diseases, Ed. 3, 1879.
3. Ransohoff, J., quoted in Keen's Surgery **6**: 634, 1909.
4. Fromme: Anuria of Twenty Days' Duration, Deutsch. med. Wchnschr. **40**: 2780, 1914. Russel, J.: A Case of Complete Suppression of Urine for Twenty Days Followed by Complete Recovery, M. Times & Gaz. **1**: 474, 1879.
5. Breslauer, S.: Lammlung von Natur und Medicin, 1720, p. 219, quoted from Fowler, E. P.: Suppression of Urine, New York, William Wood & Co., 1883. De Leon, H.: Baltimore M. & S. J., July, 1834, quoted from Fowler. Millard, H. B.: Clinical Notes, quoted by Fowler. Tournie, quoted by Mercklin, P.: Etude sur l'anurie, Paris, 1881. Eustace: Brit. M. J., 1896.
6. Russel, J., quoted by Egers: Zehntagige Anurie nach doppel seitigem ureter Verschluss durch Steine, Deutsch. med. Wchnschr. **10**: 131-133, 1884.
7. Farlow, J. W.: A Case of Suppression of Urine for Twelve Days from Compression of Both Ureters; Autopsy, Boston M. & S. J. **120**: 330-334, 1889. Minningham, W. D.: A Case of Total Anuria of Twenty-Three Days Followed by a Perfect Recovery, J. M. Soc. New Jersey **4**: 566-568, 1908.
8. Howe, H. D.: An Unusual Case of Suppression of Urine, New York M. J. **84**: 1186, 1908.
9. Fontaine, A. W.: Suppression of Urine for Twenty-Five Days, Virginia M. Month. **1**: 407-414, 1874. Russel (Footnote 6).
10. Gordon, L. C., quoted by Howe: New York M. J. **84**: 1186, 1908. Meyers, S. J.: Anuria: Report of a Case with Review of Recent Literature, Urol. & Cutan. Rev. **20**: 561-566, 1916. Natali, N.: Un cas di anuria durata 27 giorni, Gazz. d. osp. Milano **24**: 1291-1293, 1903.
11. Breslauer (Footnote 5). Alexander, J.: Edinburgh M. J. **5**: 246, quoted from Fowler. Baily, T. L. W.: Notes on a Unique Case of Anuria—Recovery, Charlotte M. J. **7**: 537-540, 1895.
12. Cited by Howe (Footnote 8).
13. Parr, B.: Ischuria, London Medical Dictionary **1**: 836, 1819.
14. Quoted by Fowler: Suppression of Urine.

Rinninger,[15] forty-eight days; Huebenthal,[14] fifty-one days, and Baily,[11] fifty days, and the same case on an earlier occasion, sixty days. As a representative of these amazing reports of complete anuria, Parr,[13] for years attending physician in a London hospital, writes:

> We have met with an instance where no urine was apparently discharged for six weeks, nor was there any vicarious evacuation except a profuse sweat for a day or two; or the slightest suspicion of imposture, as the patient was in a hospital and constantly watched. Medicine seemed to give no relief and the discharge at last gradually returned.

Most of the cases of prolonged anuria seem to be associated with renal calculus or toxic nephritis; some are due to cancerous or other ureteral obstruction, and others are thought to be reflex; while still others are termed "hysterical" anuria. According to the statement of Morris,[16] recurrent cancer rivals calculus as the most frequent cause of long standing complete anuria. My analysis of the literature would lead to the belief that it is not so common. The longest duration I could find of cancerous obstruction, besides those mentioned below, are those of Sir William Roberts[17] of fifteen days, J. Hutchison,[14] eleven days, and Tournie,[5] twenty-one days of absolute anuria. Debove and Dreyfus,[17] accepted by Merklen, report a case of twenty-four days of relative anuria, seventeen days of which was total anuria, the cause of which was recurrent carcinoma of the uterus. The patient of Howe,[8] operated on by vaginal hysterectomy for uterine cancer, had a recurrence and passed no urine from May 17 to June 11, 1906, a total of twenty-four full days. It is a matter of interest that Howe's patient had a vaginal hysterectomy, as did the patient mentioned below.

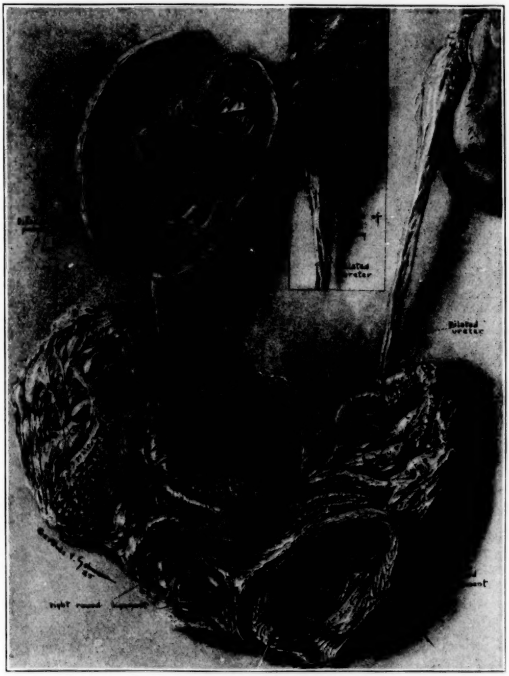


Fig. 1.—Condition found at necropsy.

REPORT OF CASE

The case reported here was one of apparently total anuria of thirty days' duration due to obstruction of both ureters by a postoperative recurrent carcinoma.

History.—Miss A. F., aged 64, American, a milliner, who lived with a sister for the last fifteen years, had suffered from a vaginal tumor, which in recent years frequently extended to, and occasionally beyond, the vaginal introitus. This vaginal mass would bleed very profusely at times, undoubtedly causing marked anemia with cardiac palpitation. In general she was quite as well as common, however, up to September, 1922, after which she flowed so profusely for seven months that she accepted advice to have an operation, which was performed by Dr. St. Elmo Sanders, April 10, 1923. The uterus and tumor mass were removed vaginally. The clinical and gross pathologic diagnosis was made of cervical carcinoma.

Postoperative convalescence was uneventful. There was no vaginal bleeding during the remainder of life, though she gradually lost strength and initiative. For some weeks preceding and also following the operation, there was no wakeful minute she was free from pain along the right sciatic nerve, in the lumbar region and about the pelvis. August 22, 1923, the patient told her sister that she could not pass urine, and did not remember that she had for a day or two. Attention being focused on the condition, futile attempts were made to compel urination for five days, after which date she was under the constant daily care of Dr. C. E. Frazier or myself, with graduate and trustworthy nurses, as well as the patient's sister, as attendants. Both the patient and the sister stated positively that she had not passed urine for at least five days before the physician was called. Every one connected with the case was alert and anxious for any possible evidence of urinary output—even the patient herself. We feel that there was neither motive for, nor question of, deception in this case. She was catheterized by two physicians, and by both nurses at various times from the fifth to the twenty-eighth day of anuria, and not a single drop of urine was found in the bladder at any time. There was no urinary odor detected on the bedclothes or gowns or in the vessel at any time. She died, September 21, at 6 p. m., after at least thirty days in which no evidence of urinary excretion was noted by any one.

I first saw her, September 6, fifteen days after the onset of the anuria. She was a rather thin woman, definitely anemic, with slight suborbital padding and moderate swelling of the right leg only. There was edema of the right side of the vulva, slight mucous vaginal discharge with no urinous odor, and no rectal or vaginal hemorrhages. There was no evidence of vesicovaginal or vesicorectal fistula at any time during the illness. Rectal examination disclosed a hard, somewhat nodular mass the size of a large grapefruit on the right which could be felt suprapubically also. There was a mass on the left perhaps one-half the size of the opposite. Tenderness was marked.

15. Rinninger, E. M.: A Case of Anuria of Forty-Eight Days' Standing, M. Mirror **1**: 461-463, 1895.
16. Morris, H.: Renal Surgery, Philadelphia, H. Blakiston's Son & Co., 1898.
17. Quoted by Merklen, Pierre: Anuria, Paris, 1881.

The temperature was constantly subnormal, 95 F. being common, and it was reported as low at 92 F., twelve hours before her death. Respirations were somewhat irregular for days before her dissolution, and were as low as from four to six a minute many hours before her death. This was at least three days removed from the one-fourth grain hypodermic of morphin given for her pain. Not to exceed five such hypodermic injections were given during my entire period of observation. The pulse was surprisingly regular during most of the illness, becoming weak very gradually. The blood pressure did not exceed 140 at any reading. Death seemed to be due to respiratory paralysis.

Fig. 2.—Chronic diffuse nephritis.

Particularly striking were the signs of intoxication. She did not go into coma as usually thought of with uremia. The mentality was benumbed, and drowsiness, giddiness, somnolence and slight delirium at times were present. There was anorexia, and very moderate headache. She recognized me at each of my visits, would frequently give evidence of having heard conversations in the adjoining room, and conversed with the attendants to the last. Ten minutes before her death she asked her sister to lay the heavy covers back, and thanked her for doing so.

Motor symptoms were likewise peculiar to the type of prolonged obstructive anuria. These were limited to muscular twitchings, fibrillations and subsultus, and these never approached convulsive movements, either locally or generally. There were increased knee kicks but no Babinski phenomenon. There was no paralysis, ocular, facial or systemic. When first seen, the pupils were slightly dilated; later there was definite myopia.

Only symptomatic and palliative treatment was instituted. Fecal evacuation was encouraged by daily enemas or mild laxatives. Milk, coffee and water were crowded. There was difficulty in forcing perspiration, and after a day or two of attempts, hot packs were dispensed with. There were, however, spontaneous drenching sweats on several occasions. No diaphoretics were used at any time. Vomiting, which had existed for eight weeks before the onset of the anuria, still persisted from one to three times a day, which had a tendency to be copious and malodorous. Salivation was not noticeable. Unfortunately, no urea studies were made on the vomitus or saliva.

Deserving of record is the white blood count, which averages above 21,000, the polymorphonuclears being in excess of 90 per cent. The blood urea nitrogen, determined by Marshall's modification of Van Slyke and Cullen's method, was:

September 6 (fifteenth day of illness): 130 mg. per cent.
September 8 (seventeenth day of illness): 131 mg. per cent.
September 13 (twenty-second day of illness): 170 mg. per cent.
September 18 (twenty-seventh day of illness): 169 mg. per cent.

The blood serum calcium fell from 7.9 mg. per cent., September 6, to 6.4 mg. per cent., September 13.

Necropsy.—Three hours after death, the pelvic anatomy was found distorted (Fig. 1). In the right false pelvis reaching down into the culdesac was a hard, oblong, somewhat friable mass as large as the double fist. This was firmly bound down against the vessels and nerves and completely encircled the right ureter, which was dilated to 1 to 2 cm., down to the mass, where the dilatation ended abruptly. The remainder was completely collapsed for about 7 cm. The right kidney was moderately hydronephrotic, the renal pelvis and calices being dilated to approximately 100 to 150 c.c. The left pelvis contained a mass identical in firmness and consistency to the opposite, of one-third its size, which likewise encircled and compressed the ureter for fully 5 cm. A left hydronephrosis two-thirds the size of the right and left hydro-ureter was discovered. Dissection was done with difficulty. The kidneys, masses, bladder, rectum and vagina were carefully removed, but no evidence of fistula found. There was no urine in the bladder. There was no evidence of metastasis in the liver or lungs. The right pleura was adherent throughout. The left pleural cavity contained about 500 c.c. of fluid. Nothing of interest further was found.

Dr. H. R. Wahl, dean of the University of Kansas School of Medicine and head of the Department of Pathology, has in the museum the specimen with detailed description of gross and microscopic pathologic changes. I give here the essential points of his description, leaving to another communication the points of interest in the pathology of obstructive anuria.

To the foregoing description, he adds: Grossly, the kidneys' capsule stripped rather readily, though here and there it seemed to be slightly adherent. The surface was rather smooth. On section the kidney cut readily and the cut surface did not present anything very unusual. The right kidney showed the pelvis and calices were much more markedly distended than the left, and there was more atrophy of the kidney substance.

Microscopically, the cortex of the kidneys was markedly swollen. The glomeruli also were swollen, the tufts completely filling the glomerular space. There seemed to be diffusion of many of the cell outlines, so that they were indefinite. The red cells were rather agglutinated together. There was marked cloudy swelling, the tubular epithelium frequently filling up the tubules. In some places the glomerular epithelium was broken down. The cells of Bowman's capsule were distinctly swollen, and in other places they ran into the interstitial tissue, which was definitely increased in amount, particularly in certain patches. In the interstitial tissue there was some infiltration with polymorphonuclear leukocytes. There was a very extensive diffuse inflammatory process throughout the kidneys. In some places the patches of fibrous tissue were more prominent than in others. In the medulla there were some cystic dilatations of some of the collecting tubules. The kidney showed in another section much more atrophy and not so much swelling and acute inflammatory change as in the preceding slide. Some of the glomeruli were swollen and showed an infiltration of leukocytes, including polymorphonuclears. In one of the sections there seemed to be considerable atrophy of the convoluted tubular epithelium. In some places, the cells lining Bowman's capsule of the glomerulus were swollen. The picture of the kidney as a whole, while that of an inflammatory process, was not as severe as would be expected from the marked functional disturbance.

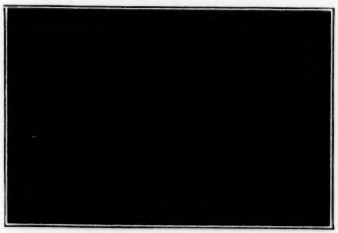


Fig. 3.—Recurrent carcinoma.

A section taken through the tumor tissue in various areas showed large, irregular, atypical masses of squamous or flattened epithelial cells evidently derived from the cervix and infiltrating in every direction. These cells showed numerous mitotic figures and marked variation in their general appearance in the size, shape and staining.

Anatomic Diagnosis.—This was: secondary carcinoma involving the pelvic lymph glands and the tissue surrounding the bladder; absence of uterus (operative), with cicatricial scar

tissue in the neighborhood of the bladder and adjoining the peritoneum and adjacent structures; complete stenosis of both ureters; bilateral hydronephrosis and hydro-ureter; acute and chronic diffuse nephritis. (The lesions in the kidneys, however, were not as severe as one would expect with a complete anuria of the duration that this patient had.)

COMMENT

A fairly careful review of the literature available in America would lead us to believe that the case described is very rare. There is ample evidence in the literature that such cases were much more common before roentgen-ray diagnosis, skilled ureteral catheterization, and asepsis and boldness of modern surgery pointed out and relieved the pathologic condition. In this case, every evidence pointed to a bilateral recurrent carcinoma, and the patient and her relatives would not allow, nor did I feel justified in urging, radical intervention.

I have presented the case briefly but accurately as it was studied clinically. The fact that so many in attendance would have welcomed the appearance of urine, and the fact that catheterization gave no evidence of urine in the bladder on any trial, does not prove beyond a question that there was none passed. The extreme difficulty in dissecting the ureters from the masses on either side is the most convincing evidence of the unusual history agreeing with the gross pathologic findings. There is so little known about the function of the kidneys in complete bilateral obstruction, and so little of microscopic evidence is attached to the recorded long-standing anuria cases, that the condition demands a separate paper for consideration of such conditions.

As one studies the literature, the impression is imperative that the clinical picture, the metabolism and the type of uremia itself found in these conditions is so very different from the usual case seen that one longs to unravel the mystery connected with such a case. If there be divergence between the gross or microscopic renal pathologic condition here and that expected from cases of unilateral obstruction, we can only await the further research of others to explain. It may be said, finally, that the functional changes in oxidation processes, of vicarious nitrogen elimination, and remarkable tolerance to complete uremia, are quite beyond present knowledge to interpret. One would be extremely fortunate to see more than one such case in a lifetime, and, when seen, the condition impels familiarity with the world literature as it did Fowler, Farlow and Sinkler.[18]

815 Shukert Building.

18. Sinkler, W.: Suppression of Urine of Long Standing Without Symptoms of Uremia, Tr. Col. Phys. Philadelphia **18**: 121-131, 1896.

Bilateral Pulmonary Tuberculosis.—All pulmonary tuberculosis is essentially bilateral, so far at least as the deep lung is concerned. The roentgen ray shows involvement of both deep paravertebral regions, but more marked, as a rule, on one side than on the other. On the side less involved the process may remain restricted to the deep lung, or in time it may in its turn reach the apex and develop superficial lesions of the upper lobe, which do not differ in their pathology from those of the lung first attacked. As a rule, lesions of the lung secondarily involved are larger and more acute than those of the side first affected. It is a very common error to overlook the initial superficial lesion and to consider the second as the first involvement, or, if the presence of a small lesion is discovered on the side really first implicated, to consider it secondary in point of time to the larger lesion. Unless both lesions are very old, the distinction is made as follows: The older lesion will show obliteration or greater contraction of Kronig's isthmus, a harsher breathing and a more prolonged expiration.—Pratt, J. H., and Bushnell, G. E.: Physical Diagnosis of Diseases of the Chest, p. 210.

ISTHMOSPASM OF THE FALLOPIAN TUBE

REPORT OF CASES *

WILLIAM T. KENNEDY, M.B. (TOR.)
Junior Attending Surgeon, Woman's Hospital
NEW YORK

Sterility, dysmenorrhea and anteflexion in cases in which no pathologic condition can be found must have as their cause some variation from the normal.

After the examination of the male has revealed numerous normal motile spermatozoa, and after the examination of the female has shown no pathologic condition of the genital tract from the vulva to the ovary, sterility is still a puzzle to the gynecologist. Factors such as incompatibility of man and wife, stenosis of the cervix, and anteflexion of the uterus are laid down as causes, but they may be only steps in a

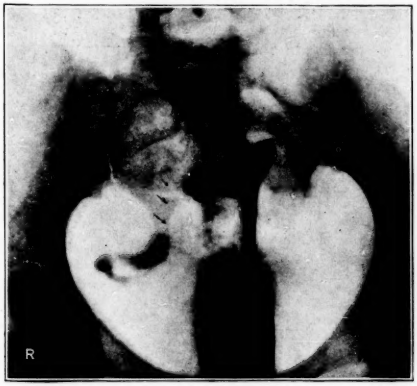


Fig. 1.—Isthmus of right tube normal.

chain in the individuals having a general hypertonic condition of all muscle fibers, especially the circular smooth muscles, sometimes the autonomic nerve fibers predominating and at other times the sympathetic.

Haas [1] describes the hypertonic infant and the successful treatment of hypertonic stenosis and pylorospasm with atropin. Whether or not this and other hypertonic tendencies extend into adult life, we do not know; but it is quite possible that it is present to a certain degree in the so-called neurasthenic individual.

Williams [2] describes a longitudinal muscle in the normal isthmus which may assist materially in the migration of the fertilized ovum from the fimbria into the uterine cavity, but its inability to contract beneath a hypertonic circular muscle may inhibit or prevent the passage of an ovum.

Schmidt,[3] describing the condition of the interstitial segment of the tube in pregnancy, believes that only the absence or pathologic course of muscle contractures—

* From the Clinic of the Woman's Hospital.
* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Haas, S. V.: Arch. Pediat. **36**: 516 (Oct.) 1919.
2. Williams: Obstetrics, Ed. 4, 1917.
3. Schmidt: Ztschr. f. Geburtsh. u. Gynäk. **86**:459 (Dec. 22) 1923.

more readily possible at the angle of the tube than elsewhere—can be the cause of difficult separation of a placenta at the angle of the tube.

Noble,[4] discussing anteflexion and dysmenorrhea, suggests that many times dysmenorrhea and sterility are wrongly ascribed to anteflexion, and also that pathologic anteflexion is congenital.

Rawls [5] observes in dysmenorrhea and sterility that a stricture in the uterine or cervical canal per se is not sufficient to bar the entrance of the spermatozoa, and he believes that this stricture is most often the predisposing cause and the exciting cause is some change in the mucous membrane of the cervix and the uterus.

Reynolds [6] has observed the existence of spasms in the uterine attachments in the examination for sterility, and the existence of an abnormally low "postcoital" flow associated with a small external os and an anteflexion of the cervix on the body of the uterus.

Polak,[7] reporting 299 cases in a paper on ectopic gestation, shows that ninety-four belong to a type which, following some procedure for the cure of their sterility, have developed an ectopic pregnancy (seven women had this history with recurrent ectopic pregnancy).

Polak [8] states also that:

> Where the ectopic has occurred after a long period of sterility in a woman who has never borne a child, and the ectopic is the first pregnancy after years of married life, I take it for granted that the tube on the other side is congenitally deformed and I have removed the other tube. I have also removed the other tube in cases where the woman has had a long period of sterility following a definite attack of pelvic inflammation, even though the tube was apparently patent to a fine probe.

Sampson [9] speaks of the tube opposite to that which contained an ectopic pregnancy:

> In very many of the reports in which its condition is mentioned, it is spoken of as normal. It must be frankly acknowledged that we are unable to judge of the capabilities of a tube from its appearance.

Smith,[10] commenting on operation for ectopic gestation and repeated ectopic gestations, reports many a normal tube left on the side opposite to that removed for ectopic gestation. He says:

> If I may judge from the literature and from my own experience, there is no one type of tube seen at such operations which from its appearance would seem, on the one hand, to make it especially disposed to a further ectopic pregnancy and give a sufficient reason for its removal; or, on the other hand, to warrant our safely assuming that such an accident would not recur and that a normal pregnancy, if any, would take place.

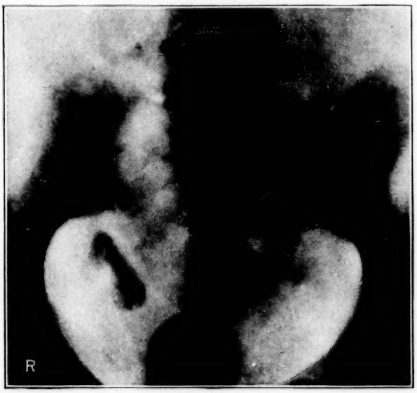


Fig. 2.—Type of tube in which isthmian canal was emptied by contraction of its circular muscles, but uterus and ampulla of the tube remain full.

Aldridge,[11] reporting the insufflation of the uterus and tubes in 600 cases by the Rubin method, states that:

> There are undoubtedly conditions which obstruct the passage of gas through the tubes which cannot be seen when the tubes are examined at operation, and it is impossible to say that the tubes are patent because they appear normal to inspection.

Meaker,[12] speaking of the use of antispasmodic drugs in sterility, says:

> Muscular spasm in the female pelvic organs is not an uncommon phenomenon. It is a prominent feature of certain types of dysmenorrhea, and has been thought at times to cause stenosis of the os internum of the uterus. From such instances of spasm in the uterus to the idea of spasm affecting the musculature of the interstitial portion of the tube is no very far cry.

Rubin,[13] to whom we are indebted for the valuable procedure of insufflating tubes, states that:

> Occasionally, in a nonpatent case, that is, where the pressure is high, we are ready to conclude that the patient has occluded tubes, but on second examination we will find the gas goes through.

Peterson and Cron,[14] observing a number of cases through the abdominal incision, found that when the pressure was sufficiently raised the apparent obstruction at the isthmus was overcome and the gas appeared at one or the other extremity.

Blair-Bell [15] has said:

> I think that light will soon be shed on that curious anomaly I call selective sterility. . . . I have observed, however, that a difference in blood grouping of married couples has no direct relation to the possibility, or otherwise, of conception.

From the observations of these authors we are led to believe that anteflexion, dysmenorrhea and sterility are rather closely related and in many cases are the result of some condition yet undescribed. We are forced to believe that a large number of tubes—some partially and some completely—obstruct the flow of carbon dioxid gas through them when insufflated; but when observed and insufflated at operation, they allow the passage of carbon dioxid gas and appear perfectly normal (circular muscles relaxed by anesthesia). One cause of this condition I believe to be a hypertonic contraction of the isthmus of the fallopian tube, and recent studies may serve to substantiate such a belief.

PHYSIOLOGY OF THE TUBES AND UTERUS

Halsey[16] finds that pilocarpin and physostigmin excite violent uterine contractions which may become

4. Noble, in Kelly and Noble: Gynecology and Abdominal Surgery **2,** 1907.
5. Rawls: Am. J. Obst. **68:** 35, 1913.
6. Reynolds, E., and Macombier, D.: New York State J. Med. **24:** 104 (Feb.) 1924.
7. Polak, J. O.: Am. J. Obst. & Gynec. **2:** 280 (Sept.) 1921.
8. Polak, J. O.: Tr. Am. Gynec. Soc. **36:**448, 1911.
9. Sampson: Surg., Gynec. & Obst. **18:**587, 1914.
10. Smith: Surg., Gynec. & Obst. **18:**684-695, 1914.
11. Aldridge, A. H.: Am. J. Obst. & Gynec. **6:**53 (July) 1923.
12. Meaker, S. R.: The Use in Sterility of Antispasmodic Drugs, J. A. M. A. **82:**2098 (June 28) 1924.
13. Rubin: Gyn. Tr. **46:** 136, 1921.
14. Peterson, Reuben; and Cron, R. S.: Therapeutic Value of Transuterine Gas Inflation, J. A. M. A. **81:**980 (Sept. 22) 1923.
15. Blair-Bell: Am. J. Obst. **2:** 130 (Aug.) 1921.
16. Halsey, cited by Meyer and Gottlieb: Pharmacology, Philadelphia, J. B. Lippincott Company, 1915.

tonic in character, and here as in the intestine, atropin in small doses causes excitation and in large doses cessation of the movements of the uterus. Toxicologically, it is important to remember that, simultaneously with peristalsis, uterine contractions may be reflexly excited by chemical irritation of the intestinal mucous membrane. MacLeod [17] says that pituitary extract acts directly on involuntary muscle fibers themselves. From the recent physiologic study of the tubes, uterus and cervix by Whitehouse and Featherstone,[18] we may surmise that there is some local center apparently controlling peristalsis; and, since peristalsis begins near the junction of the tube and the uterus, it might be logical to assume this center to be in or near the isthmus. Any hypertonic condition would probably have its origin here also and be proportional to the degree of stimulation of autonomic innervation over the sympathetic innervation, and may produce an abnormal contraction of the circular muscle even to obstruction. Let us recall pyloric stenosis. The pylorus is innervated by the autonomic nerve branches, which supply the circular muscles, and by the sympathetic fibers, which probably supply the longitudinal muscles. Stimulation of the autonomic causes violent contraction of the circular smooth muscles, but stimulation of the sympathetic produces intestinal relaxation. The balance of the two innervations produces no symptoms, but hyperautonomic innervation causes obstruction. Two cases were reported by Hirschsprung in 1888, but it was not until 1896 that Thomson first published its description. Now its occurrence is quite frequent. It is amenable to medical and surgical treatment. Similarly, may the isthmus of the fallopian tube not respond? We recall that epinephrin, stimulating the sympathetic, and atropin, paralyzing the autonomic, produce this effect in bronchioles and intestines and should do so in the tubes, uterus and cervix. By deduction, we might expect to find dysmenorrhea relieved by atropin or by hypodermic epinephrin. Cases 1 and 2 will illustrate this deduction.

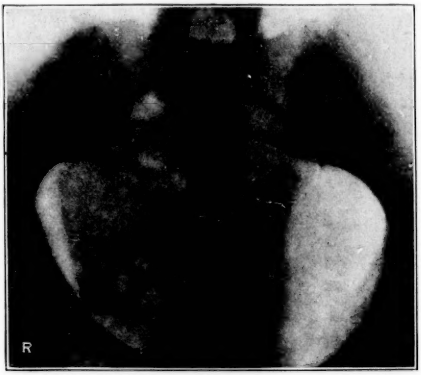


Fig. 3.—Findings illustrating deduction that circular isthmian muscles of tube were hyperactive. Similar to tube in Figure 2.

CASE 1.—A woman, aged 27, came on account of sterility. The Wassermann reactions of both husband and wife were negative. Operation for retroversion was done. She became pregnant and had a miscarriage. Six other miscarriages followed. During the eighth pregnancy, more or less uterine contractions began about the third month, accompanied by spells of nausea with rather frequent vomiting even though the patient was confined to bed. She was given atropin, hyoscyamus and benzyl benzoate, with the result that both the uterine contractions and the pyloric contractions were relieved for the next seven weeks, but the patient eventually aborted. Thus, isthmospasm (if we look on uterine contractions as initiating in the isthmus) and pylorospasm were simultaneously present in the same patient, and both were temporarily relieved by antispasmodics.

CASE 2.—A woman, aged 27, had dysmenorrhea since menstruation began. The menstruation cycle was 12 by 28 by 7. Pain was severe for four days; there were small clots for the first two days. The breasts swelled during menstruation. She had been married five years, and was pregnant four years before I saw her. Miscarriage occurred at six months following an injury. Three years before, in the Edinburgh Infirmary, both tubes had been resected (report only recently received). At the Woman's Hospital, in July, 1923, dilation and curettage were done, and a stem pessary was applied. Pathologic examination of the uterine curettings revealed premenstrual uterine mucosa. Convalescence was normal. The stem remained in until Sept. 19, 1923. In October there was no relief from symptoms. In January, 1924, the condition was unchanged. The tubes were insufflated under a pressure of 200 mm. of mercury. Five trials were made. The tubes were occluded. In February and March, the uterus and tubes were dilated with carbon dioxid gas, just before menstruation, with slight relief of the dysmenorrhea. In April, the tubes and uterus were again dilated with carbon dioxid gas, and 6 minims (0.36 c.c.) of 1:1,000 solution of epinephrin was injected into the anterior lip of the cervix with the result that at this menstruation there was scarcely any pain. For the May menstruation the treatment was the same as in April, with the result that the patient had no pain. The June period came on a day or two early; dilation was not done and epinephrin was not given, yet there was no pain during this menstruation; then epinephrin was discontinued, and dysmenorrhea began to recur gradually and is now as severe as ever.

DIAGNOSIS

Symptoms.—There may be but one symptom, sterility; or there may be two symptoms, sterility and dysmenorrhea.

Signs.—Before Operation: At present only one preoperative sign has been observed by roentgenographing those tubes which are occluded at their fimbriae. (It will be seen that certain tubes occluded at the isthmus can be placed in this class.) A further analysis of cases presented in a previous paper [19] shows that of six cases in which the tubes were occluded at their isthmuses, four uteri were anteflexed and two were normal; also, of six cases in which the isthmus was able to contract and empty the contents of 20 per cent. solution of sodium bromid in either direction, four uteri were anteflexed, one normally flexed, and one retroverted.

Figure 1 illustrates a normal isthmus throughout its entire length. Figure 2 shows that type of tube in which the isthmian canal was emptied by the contraction of its circular muscle but the uterus and the ampulla of the tube remain full. This patient's uterus was moderately anteflexed, and she complained of sterility and dysmenorrhea. More than a year later, a patient came complaining of sterility and dysmenorrhea whose left tube had been previously removed for an ectopic pregnancy. It was deduced from the previous observation that one was dealing with a tube having its circular isthmian muscles hyperactive. Figure 3 was taken, and illustrates our deduction. A later operation done for adhesions revealed an apparently normal tube.

17. MacLeod: Physiology and Biochemistry, Ed. 4, 1922, p. 811.
18. Whitehouse and Featherstone: Brit. M. J. 2:406 (Sept. 8) 1923.
19. Kennedy, W. T.: Am. J. Obst. & Gynec. 3:607 (June) 1922.

During Operation: Peterson reports tubes occluded to carbon dioxid gas insufflation which during operation appear normal and allow the passage of gas through the isthmus; i. e., when relaxed by anesthesia.

After Operation (microscopic): This observation was made by removing the isthmus on each side from one patient and one isthmus from another patient, and then serially sectioning and staining them. The following paragraphs give a brief summary of the two cases.

CASE 3.—A woman, aged 23, married at 18, complained of sterility and dysmenorrhea. Menstruation began at 14 and was irregular; duration was three days, with pain. There was no history of pelvic inflammation. The uterus was small and anteverted, but not anteflexed. The cervix was soft. The left adnexa were thickened, with a small ovarian cyst. The tubes were insufflated by Aldridge and reported occluded. Spermatozoa of the husband were poorly developed and few in number. At operation, May 13, 1921, the uterus and right ovary were found normal. The left ovary had a cyst about 3 cm. in diameter in its wall. Both ampullae of the tubes were normal in every way except that one fimbria of the left tube was attached to the posterior of the broad ligament by a single fine adhesion. Neither isthmus would pass a fine probe. The left isthmus was normal in appearance but felt as though it contained a "fibrous core." The right isthmus was larger and felt as though it contained a larger "fibrous core." It was decided that the seat of obstruction was the isthmuses, so both were excised and a hysterosalpingo-anastomosis[20] was done after the method I[21] described in 1923. Although the dysmenorrhea has gone and gas has passed through the tube at pressures lower than 100 mm. of mercury at two occasions, one and two years, respectively, since operation, the patient has not yet become pregnant. Both isthmuses were serially sectioned, stained with hematoxylin-eosin, and by Van Gieson's method. The canals of both revealed slight variation in size, were not constricted, were patent, and the narrowed diameter of each was greater than 1 mm. Both walls had normal musculature, and showed no nodules and no evidence of any inflammatory condition. The muscle wall of the right tube was considerably thicker than that of the left, and its epithelium was slightly irregular in shape and slightly atrophic in appearance. In short, the tubes were very practically normal. We may conclude in this case that the normal isthmus did obstruct the flow of carbon dioxid gas during insufflation at 200 mm. of mercury pressure and that after these isthmuses were removed, carbon dioxid gas easily passed through the tubes.

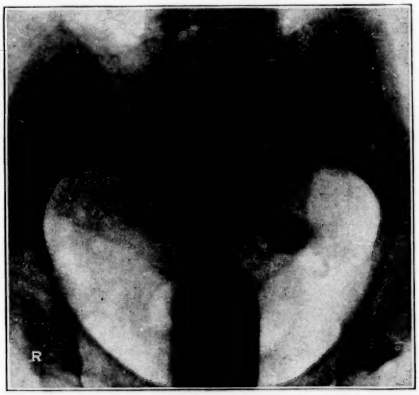


Fig. 4.—Right tube; shadow absent; isthmus in spasm preventing sodium bromid solution from passing into ampulla.

CASE 4.—A woman, aged 27, married five years, complained of sterility and dysmenorrhea. The tubes were occluded. The husband had two children with the first wife. The patient, the second wife, was told she had had salpingitis eight years before. The uterus was small, anteflexed and retrocessed. The adnexa were normal. A roentgenogram taken with 20 per cent. solution of sodium bromid, and 200 mm. of mercury pressure, showed the right isthmus occluded, the left fimbria occluded, and the uterus acutely anteflexed. Figure 4 illustrates the condition of the right tube. At operation the ampulla of the right tube was found normal, and the isthmus, which throughout its length was extremely small and had a corelike canal approximately 1.5 mm. in diameter, was excised, serially sectioned and stained, but no obstruction was found. Hence, another tube with a microscopically normal isthmus obstructed the passage of carbon dioxid gas and the passage of the solution of sodium bromid at 200 mm. of mercury pressure before operation. Thus, a tubal isthmus appearing microscopically normal can have a patent canal and yet be obstructed. Doubtless more such tubes exist, and the isthmus, while anatomically normal, has a physiologic abnormality of hypertonic circular muscles.

20. First done by Watkins, T. J.: J. Exper. Med., 1897. Reis: Am. J. Surg. & Gynec. **11**: 180 (March) 1899. Shaw, H. N.: Bull. Johns Hopkins Hosp. **32**: 305 (Sept.) 1921.
21. Kennedy, W. T.: Am. J. Obst. & Gynec. **6**: 12 (July) 1923.

TREATMENT

Such a tube presents itself to us for some treatment other than that in present use. The stem pessary, temporarily relieving spasm and restoring uterine peristalsis, dilation of the cervix, paralyzing for a time the cervical musculature, and the negative electrode also relieving the spasm are among the present methods used in relieving dysmenorrhea. But often these are only temporary, and our results for ameliorating anteflexion and dysmenorrhea and for relieving sterility will be lasting only when we can consistently relieve isthmic and uterine spasm and restore the normal peristalsis of this organ. Antispasmodics may help us. Miller has successfully treated pylorospasm and, incidentally, isthmospasm in early pregnancy by antispasmodics. Thalhimer has successfully relieved pylorospasm and incidentally isthmospasm in early pregnancy, relieving with insulin and glucose the acidosis producing them. But deranged metabolism may be the seat of the cause and show itself either in an overstimulated autonomic or an exhausted sympathetic nervous system.

CONCLUSIONS

1. Isthmospasm of the fallopian tube is one obstruction between the meeting of ovum and spermatozoa and may be the only obstruction preventing the passage of a fertilized ovum from the tube into the uterus—a predisposing factor in ectopic gestation.

2. Isthmospasm is one condition that will explain selective sterility.

3. Attenuation of an isthmospasm would explain some delayed conceptions.

4. Isthmospasm exists in some women complaining of sterility or sterility and dysmenorrhea, and is frequently associated with anteflexion.

5. Isthmospasm is caused by improper balance of the autonomic and sympathetic innervations, the autonomic being in excess or the sympathetic being deficient.

6. A tube, having an apparently normal ampulla and no evident abnormality of the isthmus, even though it obstructs the passage of carbon dioxid gas by insufflation, should not be removed at operation because we may render a patient permanently sterile who is now only temporarily so.

163 East Sixty-First Street.

ABSTRACT OF DISCUSSION

DR. JOHN OSBORN POLAK, Brooklyn: Gynecologists too frequently overlook the fact that an anteflexed uterus is merely a part of a symptom complex. The woman has not only an anteflexed uterus but also a defectively formed cervix, a narrow vagina, and long, convoluted tubes; in other words, the congenital defects are shown in all her genital organs. These are the cases in which it was formerly the practice to use a stem pessary, and its introduction, if any cervical infection existed, deprived the woman of any future chance of pregnancy. The second point referred to was the so-called spasm in the interstitial portion of the tube, produced by insufflation by the Rubin method. Whether this obstruction is the result of spasm or because of the pressure exerted on the mucous folds in the tube, causing them to act like a disk clutch in an automobile as they are pushed together, closing the lumen, I do not know; but we have demonstrated repeatedly that a tube that was not patent to gas when the Rubin test was made was found open and patent when the gas was passed through the tube with the patient under an anesthetic. This observation would seem to bear out the suggestion of spasm.

DR. LUDWIG A. EMGE, San Francisco: We are indebted to Dr. Rubin for the excellent method of testing the patency of the fallopian tube, but we also struck an obstacle which we could not explain and that was that after we had established a definite occlusion of the tube by the Rubin method we could not confirm it at abdominal operation. Going back to the physiology of the uterine muscle, we proved to our own satisfaction that a sudden impulse given to the uterus will produce spasm in most animal uteri. Therefore, we concluded that the method as originally described by Dr. Rubin should be so modified that no sudden impulse should be given by the gas and that the gas should not at any time be at a temperature lower than that of the body. Very remarkable was the discovery that a uterus that would have contracted with the ordinary Rubin method would not offer any obstacle to the heated gas given at a lower pressure but would open up and allow the gas to flow into the abdomen. We satisfied ourselves of this in abdominal operations. We learned further from this method that it might be possible to overcome the primary spastic contraction of the uterus at the horn by giving the patient benzyl benzoate or papaverin. Then we resorted to the use of galvanic electricity in very small doses, 10, 15 or 20 ma., for ten minute periods on succeeding days, and we found that in three or four days we would open up the uterine tubes and allow the gas to pass through.

DR. DONALD MACOMBER, Boston: I wish to emphasize the necessity for proceeding gently with the Rubin test. The application of sudden pressure to the uterus is very apt to bring on greatly increased spasm. Another point referred to —the temperature of the gas—is also important. We have adopted a procedure by which the gas is expanded first and brought to body temperature before it is allowed to enter the uterus. Our results have been much more satisfactory with that method. In doubtful cases in which there is some evidence of spasm or failure, we try benzyl benzoate and then test the tubes. If that fails, we then do the test as Dr. Polak suggested, under an anesthetic. In that way only will a negative test prove to be negative at operation in every case.

DR. WILLIAM T. KENNEDY, New York: The points that Dr. Polak emphasized and brought out are very valuable in this work. It seems to me that we are dealing with a symptom complex. Dr. Emge referred to the applications of heat and galvanism in doing the Rubin test in order that he might get the correct conception of the condition of the tubes. Dr. Macomber uses gentle pressure and also heat applications to the musculature of the uterus in order that insufflation might not cause an unnecessary contraction of the muscle. Dr. Macomber also brought out the most important point, that we should not consider the tube absolutely occluded unless under anesthesia the gas will not pass through the tube.

PERNICIOUS ANEMIA, FOLLOWING ILEOSTOMY *

CLAUDE F. DIXON, M.D.
JOHN G. BURNS, M.D.
Fellows in Surgery, the Mayo Foundation
AND
HERBERT Z. GIFFIN, M.D.
ROCHESTER, MINN.

The acute toxemia resulting from disturbance of the normal motor mechanism of the upper intestinal tract has been investigated in recent years, and it is now known that with high intestinal intoxication there may be no actual mechanical obstruction or vomiting. This work points indirectly to the possibility of equally serious results from more chronic types of physiologic disturbance in the intestinal tract. It has been shown that toxic substances may be derived from protein. Iwao [1] produced very marked anemia resembling the pernicious type by injecting tyramin into animals. This substance has been isolated from decomposing meat, and has been produced by the action of colon bacilli on tyrosin. Colon bacilli are normally found in the ileum; Hurst [2] and Wichels [3] also found them in the stomach and very abundantly in the small intestines in cases of pernicious anemia. Under normal conditions, the colon bacillus in the small intestine probably has no opportunity to produce toxic material from protein, but under abnormal conditions, when intestinal motility, physiologic function and bactericidal defense are interfered with, toxic substances may be formed.

Normally the fluid of the fecal material is absorbed chiefly in the proximal half of the large intestine. From the clinical standpoint, W. J. Mayo,[4] in 1909, called attention to the profound anemia that may be present in cases of carcinoma of the proximal portion of the large intestine, even though the malignancy is not advanced and obstruction is only slight. Malignancy of the distal portion of the colon is not usually associated with marked anemia. Dr. Mayo concluded that the cause of certain cases of intestinal toxemia might be assumed to be in the terminal ileum and cecocolon. The absorption of hemolytic, myelotoxic or neurotoxic material from the contents of the small or large intestine has been regarded as more than a plausible possibility in pernicious anemia because of the prominence of gastrointestinal symptoms, the atrophy of the gastric and intestinal mucous membrane, and the occasional association of pernicious anemia with intestinal stricture and also parasitic disease. The abnormality of the bile with its increased and abnormal pigments has directed attention to the spleen, the gallbladder and the liver as accessory, or even primary, factors in the initiation of the disease. The presence of hemosiderosis in the liver in pernicious anemia has been thought to indicate that the destruction of blood is most active in the portal system and its organs. These considerations led us, in the fall of 1923, to the decision that, under favorable circumstances, we would recommend temporary elimination of the colon by means of an ileostomy in cases of pernicious anemia, with a view to the determination of the influence

* Read before the Association of American Physicians, Washington, D. C., May 4, 1925.

1. Iwao, Toku: Beiträge zur Kenntnis der intestinalen Autointoxikation, Biochem. Ztschr. **59**: 436-443, 1914

2. Hurst, A. F.: Addison's (Pernicious) Anemia and Subacute Combined Degeneration of the Spinal Cord, Brit. M. J. **1**: 93-100 (Jan. 19) 1924.

3. Wichels, Paul: Ueber das Vorkommen von Bacterium coli im Inhalt des nüchternen Magens bei perniziöser Anämie, Ztschr. f. klin. Med. **100**: 535-542, 1924.

4. Mayo, W. J.: Tumors of the Cecum, J. A. M. A. **53**: 1848 (Nov. 27) 1909.

of colonic absorption on the course of the disease. Ileostomy may be performed with minimal risk, and, should prolonged improvement occur, ileosigmoidostomy could be performed later, not removing the colon, but excluding it as a mucous tube.

MAYO CLINIC CASES

CASE 1.—A man, aged 46, who came under observation, Jan. 10, 1924, had definite characteristics of pernicious anemia, including the objective findings of subacute combined sclerosis and evidence of cerebral changes. The erythrocytes numbered 2,830,000; the color index and the volume index of the erythrocytes were high. There were both clinical and roentgenographic signs of intestinal stasis in the region of the ileocecal coil.

Ileostomy was performed, January 30. The usual medical treatment for pernicious anemia was not carried out following the operation. The patient's appetite improved, the icteroid tint disappeared, and the blood count gradually rose. Five weeks after operation, the erythrocytes numbered 4,060,000. The blood cholesterol was 44 mg. for each 100 c.c. preceding operation, and 140 mg. ten days after operation. Urobilinogen was present in the urine before operation, and absent afterward. Four weeks after operation, the patient developed left hemiplegia and died, March 12. Necropsy revealed the findings of pernicious anemia and hemorrhage into the right cerebrum.

During the spring of 1924, through Professor Decastello of Vienna, we learned of ileostomies performed by Seyderhelm for pernicious anemia. Seyderhelm[5] has since reported ten cases of ileostomy for pernicious anemia, and mentioned four reported by Seeland.[6] In two of Seyderhelm's cases, improvement occurred, but following subsequent closure of the ileostomy, deterioration and death followed. In the cases showing improvement, the character of the ileostomy stool was changed in odor and appearance, and in abundance of intestinal flora; in the cases in which there was no improvement, the stool still maintained the bacteriologic character of colonic fecal material. Seyderhelm assumed that the mucous membrane of the small intestine in cases in which there was no improvement had a bactericidal power, and said that the ileostomy should not be regarded as a therapeutic measure, but as a means of learning whether pernicious anemia is intestinal in origin.

Seyderhelm, Lehmann and Wichels,[7] in 1924, reported on observations following the artificial production of a stricture from 10 to 20 cm. above the ileocecal valve in ten dogs. Two of the animals developed hyperchromic anemia with high color index, megalocytes, anisocytosis, and urobilinogen in the urine. Necropsy revealed an abundant colonic type of flora above the stricture, hemosiderosis of the liver and spleen, and megaloblastic reaction on the part of the bone marrow. In the dogs that did not develop anemia, the abundant colonic type of flora was absent above the stricture, and the degree of distention above was variable and seemed to be irrelevant. Faber,[8] Meulengracht[9] and others[10] have reported cases in human beings of anemia of the pernicious type with stricture of the small intestine, and in these very rich flora of the colonic type were also present. From these observations, it would be inferred that in certain individuals the small intestine is capable of a physiologic defense, which, even in the presence of stricture, may overcome bacterial invasion above the stricture.

CASE 2.—A man, aged 50, who came under observation, June 9, 1923, had had gastro-intestinal symptoms for four years, and anemia for at least six months. He had all the characteristics of pernicious anemia, including objective evidence of combined sclerosis of a mild type. The erythrocytes numbered 1,180,000. A series of eight transfusions was necessary to bring about a remission. By August 31, he was in a satisfactory condition. He returned, March 1, 1924, with a count of 1,410,000 erythrocytes, which later fell to 950,000. After six transfusions, the number of erythrocytes rose to 2,610,000. The patient returned again, May 22, at which time the erythrocytes numbered 800,000, and the leukocytes, 1,300; the hemoglobin was 12 per cent. One transfusion was given.

Ileostomy was performed under local anesthesia, May 29. Transfusions were given on the fourth and fifth days after operation when the patient's condition was precarious, but none was given afterward, and hematinics were not administered. The patient's appetite, his color and the blood count improved slowly, but steadily. By July 10, the erythrocytes numbered 2,510,000, and the leukocytes rose to 7,200; the hemoglobin (acid hematin) was 51 per cent. The patient continued to gain without medication. Four months after operation, the erythrocytes numbered 3,050,000; eight months after operation, 3,910,000, and the leukocytes, 8,000; the hemoglobin (Dare) was 73 per cent., and (acid hematin) 87 per cent. The patient had a steady gait; his paresthesias had entirely disappeared, and objectively he was slightly improved, as shown on neurologic examination. He had gained 35 pounds (16 kg.) and the glossitis had not recurred. The patient's general condition was reported as excellent eleven months after operation.

The cholesterol estimations in this case were variable, chiefly below normal, both before and after operation. Urobilinogen, which was present in the urine before operation, was absent on several tests following operation.

CASE 3.—A single woman, aged 37, who came under observation, Feb. 21, 1924, had been somewhat anemic since 1916, and definitely affected since 1919. Her last illness had begun about a month before examination.

She showed all the symptoms of pernicious anemia, including paresthesias, but on neurologic examination, no evidence of cord changes was found. The erythrocytes numbered 1,370,000. A series of five transfusions was necessary to bring about a remission. On dismissal, March 20, the erythrocytes numbered 3,060,000. When the patient returned, May 21, they numbered 1,790,000. Two transfusions were given and the erythrocyte count rose to 2,650,000. September 20, they numbered 940,000. Three transfusions brought the number up to 2,870,000.

Ileostomy was performed, October 6. For five days after operation, there was a fever reaching 102 F., without apparent cause, after which convalescence was satisfactory. The patient lost the icteroid tint, regained a normal appetite, relished meat, which she could scarcely eat before, and lost the paresthesias and her sense of fatigue, which had been prominent. The erythrocytes, which had dropped to 1,820,000 following operation, rose to 2,500,000 without medication. The patient was dismissed from observation, November 5, and returned, Jan. 5, 1925, when the erythrocytes numbered 2,870,000. She felt strong and was then able to take long walks. The paresthesias had not reappeared, and the glossitis had not recurred; a neurologic examination was negative; the spleen was still palpable. The patient went to California, January 15, where she died, March 3; the exact cause of death was not determined.

In this case an estimation of urobilinogen, made on the material from the ileostomy the second day after operation, was 1,800 units; estimations on successive days showed a reduction to 1,200 units, with a corresponding reduction in urobilin. One week after operation, the ileostomy tube became obstructed, and the patient was very ill, with signs of upper intestinal intoxication. A specimen from the ileum then showed an increase in urobilin, and 2,200 units of urobilinogen; by the tenth day, urobilinogen was zero, and was absent after that time. It also disappeared from the urine. Cholesterol (Bloor 1) was 83 and 74 mg. before operation, and 45 and 50 mg. after operation.

CASE 4.—A single woman, aged 43, who came under observation, Aug. 25, 1924, reported that, four months previously, her general health had begun to deteriorate, and for six weeks she had had paresthesias. The erythrocytes numbered 1,760,000. Characteristics of pernicious anemia were present, including neurologic evidence of moderately advanced combined sclerosis. The patient was unable to walk without assistance. A series of three transfusions was given, and by October 13, the erythrocytes numbered 4,180,000.

Ileostomy was performed, October 14. A high fever followed operation for three days, after which convalescence was satisfactory. The patient lost the icteroid tint, and the paresthesias became less troublesome. She was dismissed, November 11, with erythrocytes numbering 4,260,000. Jan. 6, 1925, she returned,

5. Seyderhelm, R.: Die Bedeutung des Dünndarms für die Genese der perniziösen Anämie, Klin. Wchnschr. **3**: 568-572 (April 1) 1924.
6. Seeland, C. M., quoted by Seyderhelm (Footnote 5).
7. Seyderhelm, R.; Lehmann, W., and Wichels, P.: Experimentelle intestinale perniziöse Anämie beim Hund, Klin. Wchnschr. **3**: 1439-1442 (Aug. 5) 1924.
8. Faber, Knud: Anämische Zustande bei der chronischen Achylia gastrica, Berl. klin. Wchnschr. **1**: 958-962, 1913.
9. Meulengracht, E.: Dünndarmstrikturen und perniziöse Anämie, Darmresection, Acta. med. Scandin. **56**: 432-442, 1922.
10. Mayo, W. J.: Resection of the First Portion of the Large Intestine, and the Resulting Effect on Its Function, J. A. M. A. **63**: 446-449 (Aug. 8) 1914.

tired out from holiday exertions. The erythrocytes numbered 3,210,000, and dropped to 1,400,000 during the next six weeks. After two transfusions, they rose to 2,500,000, and the patient was dismissed. She reported that she was in fairly good condition, April 10. Glossitis had not recurred.

An estimation of urobilinogen on the ileostomy stool the second day after operation was 1,600 units. A week later, the urobilinogen estimation was zero, and urobilinogen was absent from the urine. Estimations of blood cholesterol were 104 and 90 mg. before operation, and 190 mg. three months after operation.

CASE 5.—A man, aged 55, who came under observation, Nov. 29, 1924, had had a sore tongue for one year, and had been anemic for four months. Examination revealed the characteristics of pernicious anemia, the erythrocytes numbering 1,060,000. Paresthesias were somewhat troublesome; neurologic examination, however, showed no evidence of cord changes. After four transfusions, the number of erythrocytes rose to 2,560,000. A roentgenogram seemed to indicate a lesion on the lesser curvature of the stomach.

December 26, the stomach was found to be normal on abdominal exploration, and ileostomy was performed. On the fifth day, there was marked suppression of urine, and the blood urea was 212 mg. for each 100 c.c. Improvement followed intravenous administration of large amounts of slightly hypertonic sodium chlorid solution, and fluids by mouth and through the distal loop. Preceding and during this time, large amounts of fluid were lost through the ileostomy; apparently the ileum had not taken on the function of absorption. The urea was consequently not eliminated, but the patient showed no clinical evidence of uremia.

After this time, convalescence was rapid. The patient's appetite and color improved, and he gained 30 pounds (13.6 kg.) in three weeks. Urobilinogen was absent from the urine after operation. He has maintained his condition and blood count for four months without medication. Glossitis recurred for a few days three months after operation, but disappeared following a satisfactory flushing of the colon.

CASE 6.—A man, aged 38, who came under observation, Dec. 12, 1924, gave a very definite family history of epistaxis, and his father had died from anemia associated with enlargement of the spleen, which had been diagnosed as pernicious anemia. The patient did not have a history of hemophilia, but he had been subject to nosebleeds since childhood. The onset of his illness had occurred about nine months before examination with increasing weakness, anemia, more frequent epistaxis, and slight bleeding of the gums on brushing the teeth.

The spleen was easily palpable. The erythrocytes numbered 2,370,000. There was a high color index and high volume index of the erythrocytes. The patient had an achlorhydria, and a slightly sore tongue. There were slight paresthesias, and a neurologic examination was negative. Hemolytic icterus was ruled out, but the existence of a mild form of hemorrhagic purpura was questionable. The platelets were approximately 100,000, the bleeding time and retractility of the clot were normal; the coagulation time by the Lee method was normal. A diagnosis of pernicious anemia and familial epistaxis was thought to be satisfactorily established. Two transfusions were given.

Ileostomy was performed, December 27. Convalescence was uneventful. The icteroid tint disappeared, and the blood steadily improved. Jan. 14, 1925, the erythrocytes numbered 4,050,000, the spleen was definitely smaller, and the patient returned home. He did quite well for a month or more, but had one attack of epistaxis and bled once or twice from the ileostomy. He returned, March 11. He had grown weaker and paler during the preceding two or three weeks. The erythrocytes numbered 1,570,000, and the spleen was just palpable. Thus far (April 15), eight transfusions have been given without material improvement. Daily attacks of epistaxis have occurred. The platelet count has been more than 200,000, and the bleeding time has not been prolonged. Various coagulants have been ineffective. Direct transfusions controlled the epistaxis temporarily, slightly more than citrate transfusions. Radium over the spleen also seems to have been effective. However, the epistaxis continues to recur. April 11, the erythrocytes numbered 1,900,000. The patient eats well, does not show a definite icterus, and has no sense of excessive fatigue.

Examinations of the ileostomy drainage for blood have been negative. Examinations of the duodenal contents have shown no dark bile and no urobilinogen. Urobilinogen has not been present in the material from the ileostomy, or in the urine. Glossitis has not recurred, but an occasional aphthous ulcer has been present. Paresthesias are not troublesome.

SUMMARY OF CASE FINDINGS

Although Patient 1 died from cerebral hemorrhage after six weeks, the blood count and color had been improved without medication to approximately normal. Patient 2 was in very poor condition at the time of operation and had been ill for a year preceding operation. Three courses of hospital treatment and fourteen transfusions had been necessary. Since operation he has been in good health for eleven months, with the erythrocytes gradually increasing to 3,900,000; the paresthesias have disappeared, and the anemia has not recurred. Patient 3 improved after operation; the erythrocytes were held at 2,750,000 for about four months. She died about five months after operation from an acute respiratory infection. Patient 4 improved for four months after operation. There was then a recurrence of the anemia and two transfusions were given. The condition at present is satisfactory. Patient 5 has maintained his condition for more than four months without medication. Patient 6, who also had familial epistaxis, improved rapidly after operation, the erythrocytes rising to 4,000,000. He returned the third month with a recurrence of the epistaxis; the anemia also recurred, and both have persisted. The erythrocytes number less than 2,000,000, in spite of transfusions. At present, however, he is improving.

The patients have all shown the temporary improvement that so frequently follows any treatment for pernicious anemia. All have maintained a good appetite, even with the recurrence of anemia. They all lost the icteroid tint, and it did not reappear even in those who later became anemic. Glossitis recurred in only one case when irrigation of the colon became difficult, and this disappeared in a few days after the colon could be flushed. Probably the most striking feature has been the disappearance of paresthesias in all but one case, in which there was very marked improvement. This patient had moderately advanced cord changes and walked with extreme difficulty; even so, the paresthesias have not been troublesome since ileostomy, and the patient is able to walk without assistance. One patient showed slight improvement objectively and on neurologic examination.

Two patients of the series died from conditions unrelated to pernicious anemia. Two have done unusually well. Two have had a recurrence of the anemia. One patient, who had very marked manifestations of the disease, has been in excellent condition for eleven months.

Ileostomy excludes the colon so far as the absorption of deleterious substances which might be contained in fecal material is concerned; it may not, however, eliminate the possibility of the absorption of toxic material resulting from bacterial growth within the excluded colon, although this possibility has been reduced to a minimum by flushing the colon daily with sodium chlorid solution. Besides excluding the colon, ileostomy presumably establishes more complete drainage of the ileum, unless it is assumed that the level of physiologic disturbance was originally higher than the level of the ileostomy.

In view of the recurrence of anemia in two patients, it might be inferred that exclusion of the colon, together

with improved drainage of the ileum, does not directly influence the anemia of pernicious anemia. This statement should be qualified, however, by the fact that insufficient time has elapsed to judge of the effect on the anemia, and by the possibility that physiologic drainage may not be produced by ileostomy in certain cases. The very definite disappearance of the paresthesias and the glossitis indicates that absorption of toxic material from the colon and ileum has not yet been eliminated as a factor in those features of the disease. The disappearance of urobilinogen from the urine, the duodenal contents, and the material from the ileostomy, except during short periods when ileostomy drainage was not satisfactory, may be significant. The reduction in the amount of biliary pigment may, however, be due to the reduced area in which resorption of pigment can occur. The increase of urobilinogen, when obstruction of the ileostomy occurs, suggests that this substance may be formed in the intestine, possibly as a result of bacterial action.

An interesting theory of cholesterol deficiency, as a result of the loss of cholesterol through the intestinal tract in cases of pernicious anemia, could be elaborated. The deficiency of cholesterol would be likely to cause permanent damage to the conduction paths of the nervous system and to the erythrocytes, and this deficiency may also be partly overcome by elimination of the colon and improved drainage of the ileum.

Ileostomy cannot at present be advocated as a therapeutic measure, but in small groups of cases it is justifiable until its effect is definitely known. The procedure alters certain features of pernicious anemia, and may lead to more important results.

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS

A REVIEW OF FOUR HUNDRED AND FIFTY-FOUR CASES IN WHICH THE FREDET-RAMMSTEDT OPERATION WAS PERFORMED*

RICHARD W. BOLLING, M.D.
NEW YORK

The data that form the basis of this paper have been derived from a study of 454 cases of hypertrophic pyloric stenosis in infants operated on at the Babies' Hospital and elsewhere by Dr. William A. Downes and myself. In 1914, Dr. Downes adopted the operation of extramucous partial pyloroplasty as a routine. This procedure, suggested by Fredet [1] in 1910, was carried out by Rammstedt [2] in 1912 and is now generally known as the Fredet-Rammstedt operation. In 1920, Dr. Downes [3] reported 175 personal cases in which operation was performed by this method. In the period between Jan. 1, 1920, and April 1, 1925, there were 279 additional cases, in which eighty-two operations were done by Dr. Downes and 197 by myself.

In reviewing this group, it is my purpose to point out that the operative procedure used is curative and its result permanent, and that the so-called operative mortality is largely that of delay, either in diagnosis or in choosing surgical treatment. Accumulating experience confirms my belief that the question of operation should be considered as soon as the diagnosis is made, and that operation should be carried out in all but mild cases in which the symptoms are relieved by medical treatment within one week. The duration of symptoms prior to operation is probably the most important single factor affecting prognosis. In an analysis of 163 cases all included in this series, Goldbloom and Spence [4] show that among infants weighing 7 pounds (3.2 kg.) or less, there are three and a half times as many deaths as among those whose weight is more than 7 pounds. In breast-fed babies, when the loss in weight is less than 20 per cent. of the best weight and the symptoms have been present less than four weeks, the mortality is less than 3 per cent.

During the last ten years, there has been a gradual reduction in mortality, which is to be attributed not only to an increase in the proportion of favorable cases, but also to certain changes in the care of patients before and after operation. In the period from Jan. 1, 1923, to April 1, 1925, 130 patients were operated on, with eleven deaths, a mortality of 8.5 per cent. Included in this group were thirteen private patients with no deaths. Of the entire series, sixty-seven died, a mortality of almost 15 per cent. The general mortality for the first 175 cases of this series was 17.1 per cent., and there was very little difference in the results in private and in ward patients. The contrast, however, is striking in the 279 patients operated on since January, 1920. Forty private patients were operated on with one death, and 239 ward patients with thirty-six deaths.

All deaths in the hospital following operation are classed as operative deaths. Thirty-three patients died in collapse in from two to seventy-two hours after operation. In this group the average age was 9 weeks, with a history of symptoms for six weeks. The weight averaged 6.1 pounds. Twenty-two patients died in from five to twenty-six days. In two instances necropsy disclosed acute gastro-enteritis. In two patients, bronchopneumonia was found. In another dying on the twenty-first day, a small hematoma was found at the site of the pyloric wound. Severe infection of the wound from a preexisting omphalitis was the cause of death in two cases. Other necropsies were negative.

Hemorrhage was responsible for the death of five patients: Two of these died from bleeding from the abdominal wound and two from bleeding from the wound in the pylorus. One, apparently a true hemophiliac, died on the third day from continuous oozing from the pylorus and the abdominal wall.

Six deaths occurred from peritonitis. Two were in cases in which the duodenum had been accidentally opened. Two occurred early in the series, when the operation was modified by passing a bougie through the pylorus by means of a small opening in the stomach. One patient died twelve hours after an operation for an acute intussusception, which developed on the second day after operation.

PATHOLOGY AND CLINICAL PICTURE

The pathology and clinical picture of this condition have been clearly set forth in many articles in recent

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Fredet, Pierre: Rapport au VIe Congres de gynécologie, d'obstétrique et de pédiatrie, Septembre, 1910; La stenose du pylore par hypertrophie musculaire chez les nourrissons, Bull. et mém. Soc. de chir. de Paris **47**: 451 (April 6) 1921.

2. Rammstedt, C.: Operation der angeborenen Pylorusstenose, Med. Klin. **8**: 1702, 1912; Zentralbl. f. Chir. **40**: 3, 1913.

3. Downes, W. A.: Congenital Hypertrophic Pyloric Stenosis, J. A. M. A. **75**: 228 (July 24) 1920.

4. Goldbloom, Anton; and Spence, R. C.: Prognosis in Operated Cases of Hypertrophic Stenosis of Pylorus, Am. J. Dis. Child. **19**: 263 (April) 1920.

years.[5] The etiology has given rise to endless discussion, and remains obscure. The weight of evidence is in favor of a primary developmental hyperplasia of the circular muscle fibers involving the pyloric ring and the antrum. The longitudinal layer of muscle fibers and the submucous coats are usually quite normal. The walls of the stomach are somewhat thickened, and its cavity is commonly dilated. The pylorus forms a tumor, which varies in size from that of the distal phalanx of the little finger to that of the distal phalanx of the thumb, according to the age and size of the patient. The hyperplasia is probably congenital. It has been noted in a seven months fetus [6] and in several instances within a few days or hours of birth. The hypertrophy alone apparently does not often produce sufficient narrowing to cause symptoms in infants. Not until spasm has been added do symptoms appear. I am, however, of the opinion that, in all cases, hypertrophy precedes spasm. It is definitely known that the hypertrophy continues long after the spasm has subsided. In every instance in this series there was a definite, demonstrable pyloric tumor.

The clinical picture is striking and quite uniform. The observation that the condition usually occurs in breast-fed male children, frequently the first-born, is confirmed by the figures in this group. A previously healthy baby, most frequently in the second to the fourth week, begins to vomit forcibly and persistently. Shortly there is marked constipation, little urine is passed, and there is progressive loss of weight.

The onset is frequently abrupt, but may be gradual and occasionally dates from birth. In this series it varied within wide limits, but in the majority, symptoms began in the second to the fourth weeks. Onset after the fifth week is rare, and after the eighth week exceptional.

The vomiting is characteristic. It is forcible and projectile. Sometimes the food is shot out of the mouth to a distance of several feet. This may be repeated after each nursing and the amount of vomitus is large, usually the entire contents of the stomach. If the vomiting is infrequent, the amount ejected at one time is often larger than the amount of the last feeding. There is aiways gastric retention, which may be estimated by means of a soft rubber catheter to which is attached a simple suction apparatus. Definite gastric peristaltic waves may be seen, and the tumor palpated. Throughout the course of the disease there is no fever, and the infant usually remains hungry.

It is asserted that persistent spasm without hypertrophy may give a picture identical in all respects save the presence of the tumor. The truth of this assertion has never been established to my satisfaction. Occasionally, exploratory operation has been undertaken in vomiting babies and no definite pathologic cause for the vomiting found. In such cases, I see no indication for any operation on the pylorus.

DIAGNOSIS

If the condition is kept in mind, the diagnosis may be made promptly in almost every instance, and is not a matter of opinion, but is demonstrable. A palpable pyloric tumor and gastric peristaltic waves in combination occur in no other condition. The history, if obtained from an intelligent mother or nurse, is valuable and often typical. There has been much discussion as to the diagnostic value of the tumor. I consider it the most important sign, and am confident that it may be felt in all cases if sought in the proper manner.

The palpation of the tumor is most easily carried out after the stomach has been emptied by means of a soft rubber catheter and while the child is kept quiet with its usual feeding or a sugar pacifier. Usually lying to the right of and above the umbilicus, the nodule may be made out high up under the liver or even in the midline, just below the ensiform cartilage. It is a small, oblong, movable mass, about the size of the distal phalanx of the little finger, and imparts a sense of almost cartilaginous hardness through the abdominal wall. The consistency of the tumor varies as the muscle comprising it is contracted or relaxed. At the time of relaxation, the pylorus may be scarcely made out. When its position has been located, the contraction and hardening of the pylorus may be stimulated by gentle kneading with the finger.

The more emaciated the infant, the more obvious the tumor. In early cases in which there has been little loss of weight, it is more difficult to make out, but patient examination will almost invariably be rewarded. In the 454 cases reported, it has been felt in every instance but one. During the same period, there were three cases in which the anteoperative diagnosis of a tumor at the pylorus proved incorrect.

Deep, regularly recurring peristaltic waves, passing from left to right, may be seen in practically every instance, if the epigastric region is inspected after the stomach is filled and while the child is quiet. These waves were observed in all but three cases of this series. Congenital occlusion of the duodenum may give a similar picture, but this condition is very rare and the presence of symptoms from birth and the bilious character of the vomitus generally serve to differentiate it from pyloric stenosis. The significance of peristalsis depends on its degree. Slight peristaltic waves may be seen even in apparently normal infants.

The characteristic projectile vomiting is frequently observed during the examination. The secondary symptoms of loss of weight, constipation and scanty urine are merely evidences of starvation.

In my opinion, roentgenography is indicated only in doubtful cases. A. A. Strauss [7] states that the fluoroscopic examination is the most important means of making an accurate diagnosis and that it not only shows whether the condition is pyloric stenosis but classifies it immediately as a medical or a surgical case. In his hands this method has proved accurate in every instance. If this or any other method of early differentiation between cases requiring medical, and those requiring surgical care can be successfully developed, a tremendous advance in the handling of pyloric stenosis as a whole will have been made.

CHOICE OF TREATMENT

There are so many discrepancies and differences of opinion in the literature of pyloric stenosis that, having no personal experience with the medical treatment, I do not feel able correctly to interpret or discuss its results. Whatever these results may be, there seems to be no doubt that, in a large proportion of cases managed by medical methods, the treatment extends over a period of weeks and months, during the whole of which careful medical supervision and expert nursing are essential. The dangers of protracted hospital care in infants are well known. In addition to its

5. Holt, L. E.: Hypertrophic Stenosis in Infants, J. A. M. A. **68**: 517 (May 26) 1917. Still, G. F.: Congenital Hypertrophic Stenosis of Pylorus, Brit. M. J. **1**: 579 (April 7) 1923.

6. Dent, C. T., quoted by Cautley: Diseases of Children, 1910, p. 265.

7. Strauss, A. A.: Clinical Observations of Congenital Pyloric Stenosis, J. A. M. A. **71**: 807 (Sept. 7) 1918.

practical difficulties, this prolonged convalescence brings up the questions of increased susceptibility to infection and of possible permanent damage to the growing infant, from impaired nutrition at a critical stage in its development.

No medical treatment that involves taking a breast-fed baby off the breast is admissible. Goldbloom and Spence show that the mortality in artificially fed babies is three times that in the breast-fed.

If the condition is recognized shortly after the onset of symptoms, medical treatment may, in my opinion, be tried in mild cases and persisted in if the symptoms are relieved within one week. There are certain cases that respond promptly; vomiting ceases and the infant gains steadily. Obviously, there is no indication for surgery in this type. Patients first seen in the later stages should be operated on as soon as possible.

PREPARATION FOR OPERATION

Infants in reasonably good condition, who are not dehydrated, may be operated on within twenty-four hours of admission. Even in such patients a hypodermoclysis of 3 per cent. glucose solution is administered about twelve hours before operation.

In the case of the emaciated dehydrated infants whose symptoms have existed for a long time, our procedure has changed materially in the last few years. Formerly these patients were operated on immediately. Now operation is delayed for from twenty-four to seventy-two hours.

During this time, the body heat is carefully maintained, frequent hypodermoclyses of 3 per cent. glucose solution administered, and from one to three transfusions given. Direct transfusion into a peripheral vein is the method employed. The improvement brought about by these methods in apparently moribund infants is often remarkable.

Since we have practiced delay in operating on patients in poor condition, two infants with pyloric stenosis have died unoperated on in the hospital. In one, death occurred on the third day after admission. In the other, complications rendered operation out of the question. It is interesting to note that in the last 130 cases there have been only four deaths from collapse within seventy-two hours after operation, as opposed to twenty-nine deaths from collapse in the preceding 320 cases. The percentage of deaths from collapse shows a reduction from 9 to 3.

OPERATION

For those patients whose nutrition is good, ether is the anesthesia of choice. For those in poor condition, I have recently preferred local anesthesia, and it has been used in thirty-five cases in this group. When local anesthesia is indicated, the child is kept quiet with a sugar pacifier and the line of incision is infiltrated with 1 per cent. procain. It is essential that the posterior rectus sheath and peritoneum be widely infiltrated. In nine out of ten cases, the operation may be completed under local anesthesia alone. In the tenth case it will be necessary to give a little ether to close the incision.

Immediately before the operation, the stomach is emptied by means of a catheter. The incision is from 3 to 4 cm. in length, through the right rectus muscle, 1 cm. to the right of the midline, and if possible so placed as to overlie the right lobe of the liver. The pyloric end of the stomach is picked up with plain forceps and the pyloric tumor delivered through the wound. The tumor is held between the thumb and forefinger of the left hand. On the anterior surface of the pylorus, at the most bloodless part, which is usually the junction of the upper and middle thirds, an incision involving only the peritoneum and the superficial muscle fibers is made. This incision begins just proximal to the duodenum, is parallel with the lumen of the pylorus, extends well onto the anterior wall of the stomach, and varies in length from 1.5 to 2.5 cm. A small straight pair of mosquito forceps is inserted into the center of the incision and gently spread. The undivided portion of the muscle tears, thus exposing the mucous membrane. Continuing this blunt dissection from the stomach toward the duodenum, the division is carried in the line of cleavage to the duodenal ring. The separation of the muscular from the mucous layer should be sufficiently complete to permit the latter to protrude freely into the wound, beyond the level of the peritoneal covering.

Toward the duodenal end, the transition from the thick walled pylorus to the thin duodenum is sudden, and care is necessary to avoid tearing the mucous membrane. On the stomach side, the tumor gradually merges into the wall of the stomach and there is little danger of entering the lumen.

Bleeding may usually be controlled by pressure with hot pads. Occasionally it is necessary to underrun one or more vessels in the cut edge with fine silk ligatures. Toward the duodenal end of the incision, a small vessel just beneath the muscular layer may be ruptured. Bleeding from this source is easily controlled by suturing over the bleeding point a small piece of muscle obtained from the rectus. No attempt is made to cover the wound with omentum.

The abdominal wound is closed in layers, a continuous suture for each layer, additional interrupted sutures in the rectus sheath and three retention sutures. Fine chromic catgut is used for the peritoneum and fascia, silk for the skin and retention sutures. A small dressing is securely fixed with adhesive strapping. Sutures should be removed about the tenth day.

ACCIDENTS AND COMPLICATIONS

The duodenum has been opened five times in this series. The opening should be repaired with fine silk sutures. Hemorrhage from the pyloric wound has occurred four times, and careful hemostasis is essential. Hemorrhage from the abdominal wound has occurred in a greater or less degree in eight patients. The use of a continuous suture in each layer of the abdominal wall and accurate apposition of the skin edges reduces this complication to a minimum.

Material infection of the wound is rare. Not infrequently there is some irritation at the suture exits, which clears up immediately after the sutures are removed. In infants in whom omphalitis is present at the time of operation, infection of the wound usually occurs in spite of every precaution.

Separation of the wound edges occurred in several instances. In two, resuture of the wound was necessary. In four there was ventral hernia. One patient was operated on, two were cured by strapping and the growth of the child. One, in a recent case, persists at the present time.

POSTOPERATIVE MANAGEMENT

The postoperative management has been comprehensively discussed by Morgan.[8] Skilled nursing and an adequate supply of breast milk are as essential as is the

8. Morgan, E. A.: The Postoperative Management of Pyloric Stenosis, Am. J. Dis. Child. 1: 245 (April) 1916.

proper execution of the operation. When general anesthesia has been used, the head of the bed is lowered for an hour or two, to prevent aspiration of mucus. The body heat is carefully maintained. Hypodermoclysis of 3 per cent. glucose solution is given as indicated. Repeated transfusions are often of great value.

The tolerance for food in those infants who have been starved over long periods is markedly reduced. Great care is therefore necessary in increasing the diet. One or two hours after operation, 15 c.c. of water is given, followed in one hour by 4 c.c. of breast milk with 4 c.c. of barley water. The breast milk is repeated every three hours, eight feedings a day, and is alternated with the water. Both are gradually increased, and at the end of forty-eight hours the child is usually taking 30 c.c. Thereafter the feedings are increased 5 or 10 c.c. daily until the caloric requirements of the child are met. During the first few days, the administration of water by mouth is of great importance.

For the first four or five days, feedings are by means of a medicine dropper. A soft rubber catheter may be passed into the stomach before each feeding, to provide for the free escape of gas. Every effort should be made to preserve the mother's supply of milk. The child should nurse on the sixth or seventh day, in some instances sooner. The nursings are increased daily and are carefully supervised. If the quantities obtained are too small, the nursing should be supplemented. If it is necessary to discharge the child on a formula, this should be gradually substituted for the breast milk, beginning on the tenth or twelfth day after operation. The average stay in the hospital of breast-fed infants was fourteen days; of those artificially fed, twenty days.

RESULTS

Dr. Martha Wollstein,[9] the pathologist at the Babies' Hospital, in a study of twenty-three specimens removed in from twenty-four hours to two years after operation, has shown that the Fredet-Rammstedt operation cures the condition, in contrast to the operation of gastroenterostomy, which leaves the pylorus unchanged.

In twenty-five days after operation, the stomach is normal in size and the pylorus but slightly firmer than normal. In six weeks only a delicate scar remains. In only one instance has the operation proved inadequate.

Both Dr. Holt and Dr. Downes have analyzed the follow-up results in groups of cases, all included in this series, with the conclusion that there is no interference with normal development. Many cases have now been followed for varying periods up to ten years, and in no instance has there been evidence of pyloric obstruction or of any symptoms referable to the operation.

CONCLUSIONS

1. The diagnosis may be made promptly and with great accuracy.

2. The Fredet-Rammstedt operation is simple, curative and permanent in its result.

3. Convalescence is rapid, and the infant returns almost at once to normal development.

4. The constant progressive decline in mortality strongly suggests further improvement in this direction.

5. In view of the results obtained by surgery in this series during a period of more than ten years, there appears to me to be little justification for a delay which turns a good operative risk into a bad one, substitutes a long accidented convalescence for a brief, uneventful one, and fails to restore promptly a growing infant to a satisfactory state of nutrition at an important period in its development.

424 Park Avenue.

9. Wollstein, Martha: Healing of Hypertrophic Pyloric Stenosis After the Fredet-Rammstedt Operation, Am. J. Dis. Child. **23**: 510 (June) 1922.

ABSTRACT OF DISCUSSION

DR. CHARLES G. MIXTER, Boston: The symptoms of congenital hypertrophic stenosis of the pylorus are clear cut and definite. The reason the surgeons see so many cases in the advanced stage of emaciation and protracted vomiting is the failure to recognize the condition on the part of the pediatrician who treats the patient on the basis that he is dealing with nutritional disurbances. As in intussusception, the diagnosis is now being made early more frequently and with a consequent improvement in the statistics. At the Children's Hospital in the last ten years we have had 195 children operated on by the Rammstedt operation by four surgeons, with a mortality of 9.5 per cent. The fatalities were almost unquestionably directly attributable to starvation and dehydration. In no case has perforation or peritonitis been attributed to the operation, though no attempt has been made to cover any defect of the mucous membrane by pyloroplasty or omentum. To have a low mortality, the diagnosis must be made earlier and the operation must be undertaken promptly and particular attention must be focused on the preoperative preparation and the postoperative care. The conservation of body heat and the avoidance of rough handling are essential and should be impressed on every member of the hospital staff. Speed, gentleness and hemostasis are the essentials of the operation. The urgent need for food should be met by the institution of feeding within a few hours of the close of the operation. In two instances in our series, death was found to be attributable at necropsy to incomplete section of the pyloric tumor. Particular attention should be focused on a thing which I believe it is easy to overlook; namely, the constricting fibers. Should any doubt exist as to the patency of the opening, a small amount of water should be injected at the beginning of the anesthetic to empty the stomach of its contents and gas.

DR. ALFRED A. STRAUSS, Chicago: I should like to emphasize the fact that pyloric obstruction, whether in the adult or in the infant, is never an emergency, and that the high mortality that Drs. Downs and Bolling had at first was due to lack of preparation of the patient; namely, by hypodermoclysis, intravenous glucose injection and transfusion, the most important of all being the blood transfusion. A patient who is brought for operation does not have to be operated on, especially if moribund, in two or three hours. It is much better to prepare that patient for from forty-eight to seventy-two hours by continuous hypodermoclysis of glucose and finally by blood transfusion. Many of our infants have received two blood transfusions before operation and one after. The next important point following shock is perforation or hemorrhage. For this reason I have made a muscle flap and brought the omentum over the tumor. Our mortality has been 3.2 per cent., and we feel that it is not due to expert surgical skill but to the preparation of these patients with glucose and blood transfusion. We had no deaths due to peritonitis or leakage. The other point that Dr. Bolling made was regarding the feeling of the tumor. I can very readily see how in an experience of 400 cases one would become expert at that; but if a man sees only five or six cases a year, he cannot become expert. Early in my work I used the roentgen ray. In a few minutes, by giving mother's milk with barium and rotating the child to the right side, one will see the typical contractions of the peristaltic waves which are absolutely pathognomonic of congenital pyloric stenosis. If at the end of four hours, 80 per cent. or more has passed through, that child does not need an operation. In ten years' experience with 324 cases, we found more than 100 cases that we considered medical. There is nothing we can estimate more accurately than the emptying time in these infants. The last point is the differential diagnosis. Every little while some one reports cases of pyloric stenosis in infants 3 or 4 days old. I have been called three or four times a month by the Chicago Lying-In

Hospital to operate for a congenital pyloric stenosis in infants 3 or 4 days old. In ten years I have never operated on such a patient in that institution because in every case, after the infant was kept at the breast for ten days, the symptoms disappeared. In case of spasm of the gastro-intestinal tract not due to pyloric stenosis, one should not operate; these are cases of pylorospasm without true hypertrophy of the pylorus.

DR. SIDNEY V. HAAS, New York: About ten years ago I found that there was a group of cases that had as a symptom of a general spasticity the tendency to vomit. I described these cases under the term of functional spasm. This condition was relieved by atropin, and I said at that time that I believed pyloric stenosis would fall into this group. No one could find fault with the results of Downs and Bolling in the operative treatment of this condition, and when conditions are similar it is perhaps often the method of choice; but one must have a babies' hospital, with all the facilities for after-care, such as the Children's Hospital in Boston, to get such results as we have heard this afternoon. If one will look over the literature, one will find that with this operation in England the mortality was as high as 61 per cent. During the last ten years I have seen about 100 cases of pyloric stenosis. These I have treated medically without exception. Some babies have been operated on because they were taken away—cases I had seen in consultation. No cases that I had under my care ever fell into the hands of either Dr. Downs or Dr. Bolling. Recently one baby had to be operated on as there was a relapse. The medical treatment of this condition is just as valuable as the surgical. It is a functional condition, a disturbance of the autonomic nervous system. It can be cured by persistent gastric lavage with saline solution. The spasticity can be reduced. The reason the Rammstedt operation is superior to any other operation that has been attempted is that it does the same thing by severing the nerves through which the reflexes are produced. If the nerves are not severed, the results are incomplete after resection of the tumor. That tumor always spells an operative case is not true, for repeatedly I have demonstrated these tumors and complete obstruction by the roentgen ray. This condition is rare, but it does occur. The final results of medical treatment are just what Dr. Bolling has spoken of for the surgical treatment. Some of these children grow up to be perfectly splendid. One child I followed for nine years. The only death I had was from an acute bronchitis. The cure of these children does not call for hospital care. Nearly all my patients have been treated at home. It is true that some of these require no treatment. The treatment consists in giving atropin sulphate, 1:1,000, in milk or water.

DR. RICHARD WALKER BOLLING, New York: I should like to congratulate Dr. Mixter and Dr. Strauss on their results. I think the preoperative treatment is very important and has a definite bearing on the mortality, but early diagnosis and early surgical treatment will more or less eliminate the necessity for this. I do not believe this accounted entirely for our higher mortality in the beginning, that we did not use the various forms of preoperative treatment. I believe if all of you begin to do pyloric stenosis operations and expect to get Dr. Strauss' results, some of you at least will be disappointed. Dr. Haas has very kindly demonstrated my point about the relapses that occur during the medical treatment.

The Doctor and the Hospital.—The physician appointed on a hospital staff has an obligation to give adequate time and the best service that is in him to the hospital. He draws good from his service only in proportion to the work he puts into it. A hospital service should mean to a man the opportunity to perfect himself in his profession. If he is a surgeon, he becomes manually expert and improves his surgical judgment. If he is a physician, he sees many more patients at the hospital than he would outside and thus his clinical experience broadens.—F. A. Washburn, *Modern Hospital* **20**:164 (Feb.) 1923.

ARSENIC POISONING

REPORT OF TWENTY-EIGHT CASES *

GEORGE B. LAWSON, M.D.
W. P. JACKSON, M.D.
AND
GEORGE S. CATTANACH, M.D.
ROANOKE, VA.

At the Elks' National Home, Bedford, Va., following the noon meal, Nov. 10, 1924, twenty-eight of the Elks became violently ill. The illness was so severe that three were dead and many were moribund when we saw them in consultation ten hours later. At that time Dr. J. A. Rucker, the attending physician, had made the provisional diagnosis of arsenic poisoning from the clinical symptoms. Acting on this suggestion, a Marsh's arsenic apparatus was quickly set up and large quantities of arsenic demonstrated to be present in cider contained in a small barrel from which some of the Elks had been served at the noon meal. It was later learned that the barrel had contained an arsenic compound used for spraying trees.

In the beginning, the symptoms were practically the same in all cases, varying only in intensity, time of appearance and rate of progression.[1] Many began to vomit before leaving the table. The vomitus was at first gastric contents, followed shortly by clear mucus, which became blood stained and later almost pure blood mixed with bile. Within from fifteen to twenty minutes of the onset the bowels began to move, the movements at first being normal in character but rapidly changing to a severe, bloody diarrhea.

Coincident with the diarrhea there was an almost complete suppression of urine, a marked cramping of the skeletal muscles, a terrific headache, tremor, general nervousness, vertigo, and the typical picture of beginning collapse. Some of the patients were in profound shock within half an hour of the onset; in others the progress was slower and less intense. As the vomiting and diarrhea progressed there developed an intense thirst, dysphagia, sore and parched tongue, and a burning in the esophagus and stomach. Abdominal tenderness with slight distention manifested itself within three hours, followed by dim vision, flashes and spots before the eyes. After about twelve hours, herpes appeared around the nostrils, lips and anus. What small amounts of urine were passed at this time were of the low, average specific gravity of 1.004, showed no albumin or sugar, and gave only a trace of blood microscopically.

With the onset of collapse, in spite of good medical treatment and excellent care by the home, some developed coma and died, the first death occurring in six hours. The second occurred in seven, the third in nine, the fourth in ten, the fifth in thirteen, the sixth in fifteen, the seventh in sixteen, the eighth in eighteen, the ninth in thirty-one and the tenth in forty-five hours. The eleventh patient passed away on the fifth day, the twelfth on the twenty-second day and the thirteenth on the thirtieth day after the taking of the poison.

Ten of these deaths occurred in the acute stage, and the other three during the subacute stage, into which the patients had passed with a cessation of the acute symptoms on the second day. At this time the nausea

---

* From the Medical Department of the Jefferson Hospital.

1. Three colored servants were deterred by the metallic taste from taking more than a sip or two and developed only slight symptoms, from which they quickly recovered. They are, therefore, not included in this report.

and vomiting tended to clear up, though persisting irregularly in a few. The picture of collapse also improved, passing into one of prostration, exhaustion and extreme weakness, which confined the patients to bed for several weeks. General pain continued in severe form in nine and in mild form in two, while five experienced acute pain locally in the head, abdomen, calves of the legs or joints only.

During this period all the eighteen showed a dirty, brown coated tongue and complained of a bad taste in the mouth, with loss of appetite. Dyspnea, tachycardia and a feeble, irregular pulse were marked features. Vertigo, dim vision and visual phenomena were retained for two weeks in fifteen. On the fourth day, conjunctivitis and a diffuse, facial erythema appeared on one patient, while herpes around the nostrils and lips of seven and about the anus of an eighth persisted until the tenth day. From the fifth to the seventh day, severe epistaxis complicated one case with a coagulation time of twelve minutes. In another patient, hiccup appeared with the initial vomiting and till the tenth day resisted all therapeutic measures. Nine had pronounced constipation, one fecal incontinence, and the others normal bowel movements with occasional diarrhea. As the constipation relaxed, the abdominal distention subsided. In sixteen cases, the liver was distinctly enlarged; in seven, the spleen was felt one finger breadth below the costal margin. General tremor subsided on the second day, but at the end of two weeks a fine tremor of the hands and fingers remained in fourteen. The deep reflexes, which had been hyperactive in thirteen cases, began to return to normal on the fifth day. Hypotension was still a marked feature in twelve patients on the fourteenth day. The initial suppression of urine slowly passed off, leaving three patients incontinent. On the fifth day the total daily output was still much reduced, with an average specific gravity of 1.010. Urinalysis at this time showed an acid reaction in fifteen and an alkaline reaction in two cases; a slight amount of albumin in only four; no sugar; many bacteria in six; quantities of epithelial and pus cells, with hyaline, granular and white blood cell casts in all. A week later the only change was the appearance of albumin in a fifth case, and an increase of the average specific gravity to 1.016.

TABLE 1.—*Blood Examinations on the Fifth Day*

	Range	Average
Red blood cells	4,480,000—5,920,000	5,150,000
Hemoglobin (Sahli)	85%—95%	93%
White blood cells*	2,800—6,400	4,100
Differential:		
Polymorphonuclear neutrophils	20—55%	36%
Polymorphonuclear eosinophils	2—40	19
Polymorphonuclear basophils	0—2	1
Small lymphocytes	8—27	17
Large lymphocytes	0—3	1
Large mononuclears	10—40	22
Transitionals	1—10	4

* From this item are omitted three cases in which there were superimposed infections: a bronchitis with a white cell count of 10,000; a cystitis with one of 14,800, and an abscess of the arm following laceration, with a leukocytosis of 12,000.

The features were the tendency to polycythemia with leukopenia, and the marked eosinophilia and mononucleosis of the large cell type at the expense of the polymorphonuclear neutrophils and lymphocytes. There were no abnormal or immature forms of either red or white cells. The platelets were apparently much decreased in number.

On the twelfth day the leukocytes were returning to normal (Table 2).

Blood Wassermann and Kahn reactions were run on the seventeen surviving patients on the thirteenth day. Two were four plus and one was two plus, both Wassermann and Kahn tests in these cases showing the same degree of sensitivity.

TABLE 2.—*Leukocyte Count on Twelfth Day*

	Range	Average
White blood cells	3,400—7,600	4,700
Differential:		
Polymorphonuclear neutrophils	30—64%	45%
Polymorphonuclear eosinophils	2—16	9
Polymorphonuclear basophils	0—2	1
Small lymphocytes	12—30	24
Large lymphocytes	0—8	2
Large mononuclears	8—25	13
Transitionals	1—10	5

The three patients who died in the subacute stage had become gradually weaker and delirious, passing into coma without complications.

The transition to the chronic stage was gradual, and, five weeks after onset, the fifteen patients who survived the subacute stage presented the symptoms listed in Table 3.

At the end of the fifth week, nine patients complained of feeling generally worse than they had felt during the second week; the others felt better and had fewer symptoms. A repetition of the blood Wassermann and Kahn tests showed no change in the reactions. The urines by this time had returned to normal, the albumin, pus and casts having disappeared. The blood picture was almost normal (Table 4).

Recovery from the symptoms of the chronic stage was very slow, several complaining of general muscle weakness, tingling of the hands, insomnia and headache six months after the poisoning.

TREATMENT

Immediately following the onset, vigorous supportive and symptomatic treatment was given; and nine patients, all of whom survived, repeatedly lavaged their own stomachs with warm water. After the Marsh test had demonstrated an abundance of arsenic, it was decided to use sodium thiosulphate with the hope of

TABLE 3.—*Symptoms Five Weeks After Onset*

	Number
Constipation	13
Malaise and languor	12
Insomnia	12
General muscle weakness	11
Desquamation	11
Over entire body surface	4
Over hands, arms or trunk only	7
General nervousness	10
Pain in arms, abdomen, back or legs with general aching	10
Tingling of hands, arms or feet	10
Numbness of fingers, hands or toes	9
Tremor of fingers and hands	9
Hypotension	8
Impaired vision	8
Dizziness	8
Headache	6
Anorexia, nausea and vomiting	6
Hyperactive reflexes	6
Flushing and paling of skin	5
Heaviness and discomfort in abdomen	4
Paralysis of a hand, arm or toes	3
Impairment of sensation of touch	3
Persistent erythema over face or trunk	2
Conjunctivitis	1
Drooling at night	1
Diarrhea	0
Enlargement of liver or spleen	0
Pigmentation	0

inactivating the remaining arsenic by the production of its nontoxic, insoluble sulphid. At that hour there was available only crude photographers' hypo, which, however, is of practically the same chemical formula as sodium thiosulphate. This sodium hyposulphite was made into 30 grain (2 gm.) doses and given by mouth to all the patients for the first time at 3 a. m., fourteen hours after the cider had been drunk. Most of the patients continued to vomit, but as fast as they did so the dose was repeated and this treatment continued for the next two days. Beginning with the eighth day and continuing until the fourteenth, all the patients received sodium hyposulphite in 20 grain doses by mouth twice a day. Sixty-two hours after the poisoning, seven of the most severely ill patients received 7½ grains (0.5 gm.) of an intravenous preparation of sodium thiosulphate, the first able to be procured. No more was available at the time. On the fifth day, forty-one hours after the first injection, a chemically pure preparation of sodium hyposulphite was administered intravenously in 9 grain (0.6 gm.) doses to all the patients. Thirteen of these eighteen reacted in from thirty to forty-five minutes with chills and a fever of from 99 to 101.2 F., which subsided in a few hours. A large supply of ampules of sodium thiosulphate having been obtained on the sixth day, each patient received 7½ grains intravenously. This dose was repeated on the seventh day and once daily thereafter. On the eighth and ninth days the attending physician considered only six patients sufficiently ill to require it, and one of these refused the treatment after the tenth day. On the thirteenth day none received the intravenous preparation, but on the fourteenth these five were given 15 grains (1 gm.) each, which concluded all sodium thiosulphate therapy.

TABLE 4.—*Blood Count at End of Fifth Week*

	Range	Average
Red blood cells	4,512,000—5,120,000	4,800,000
White blood cells	5,800— 7,800	6,900
Differential:		
Polymorphonuclear neutrophils	42—68%	59%
Polymorphonuclear eosinophils	1—7	3
Polymorphonuclear basophils	0—2	1
Small lymphocytes	19—34	27
Large lymphocytes	0—4	2
Large mononuclears	3—10	5
Transitionals	1—6	3

COMMENT

At first we were under the impression that the arsenic had come from spray on growing apples, but a good orchardist assured us that such a thing was impossible and stated that one manufacturer this year had shipped arsenic in barrels of a good grade. To this source the cider barrel was eventually traced. It had been bought in the usual commercial way, and there is no reason why such an accident should not occur more frequently.

We could see no immediate result from the use of sodium thiosulphate, and have no comparison for permanent results except the fact that only three patients died after receiving intravenous treatment. The crude sodium hyposulphite might possibly have been given in larger doses by mouth had we been sure of its nontoxic nature. The intravenous preparation of sodium thiosulphate was given as soon as it could be obtained.

Analysis by Froehling and Robertson, Inc., Richmond, Va., of samples taken at the time of the poisoning showed the presence of 3.38 grains of arsenic (As_2O_3) per fluidounce. Most of the Elks drank several glasses of the cider, but because of the vomiting and diarrhea it was impossible to determine the amount retained.

CONCLUSIONS

1. No immediate improvement was observed following the use of sodium thiosulphate. To be of possible value in acute poisoning, it should be given at once and in maximum doses.

2. With the large amount of arsenic used in orchard work, it is surprising that not more cases of poisoning have occurred.

3. Containers of poison should be so constructed or marked that an accident similar to this one would be practically impossible.

CENTRIC PUERPERAL PALSIES*

JAMES E. TALLEY, M.D.
AND
DOROTHY L. ASHTON, M.D.
PHILADELPHIA

Centric puerperal palsies are of interest to the obstetrician, the neurologist and the internist. These palsies are usually hemiplegias, though commonly the face, arm and leg are unequally involved. Infrequently monoplegias occur. A primary partial aphasia may be the forerunner.

CLINICAL FEATURES

The comparative rarity of puerperal palsies is shown by the fact that we have been able to add only seventeen cases to those of Lafon,[1] published in his thesis in 1896, giving us forty-two cases to study. We have tried to avoid palsies arising ante partum, intra partum or immediately post partum, as these are more apt to be associated with eclampsia and cerebral hemorrhage. Our interest lies rather with the infectious cases, some with evident thrombophlebitis in pelvic or femoral veins, and some in whom these conditions were latent. The striking feature in many of these palsies is the cerebral thrombophlebitis without other evidence of infection. Unfortunately, the case reports in literature are lacking in full details. Many were in primiparas, especially in those who needed instrumental help or manipulation, as version. Fifteen occurred in women between 20 and 30 years of age, fourteen between 30 and 40. The ages of the remainder were not given. The times of the onset of the palsy were, during the first week ten; second week, fourteen; third week, eight; fourth week, two; beyond the fourth week, five, and unknown, three.

The right side was affected in twenty, the left in twelve; in ten simply a hemiplegia was noted, the side not specified.

Aphasia was mentioned in about half the cases, whether right or left, anesthesia of the same side in one fourth of the cases. There were twenty-two recoveries, partial or complete, and twenty deaths. Necropsies were reported in sixteen out of the twenty, with the following findings: cerebral thrombosinusitis and phlebitis, seven; endocarditis, two; intracerebral hemorrhage, three; general septicemia with purulent meningitis, two; thickened meninges, one; serous effusion in right ventricle, one.

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Lafon, A.: Contribution à l'étude d'hemiplégie puerperale, Thèse de Paris, 1896.

In twelve of the forty-two hemiplegic women there was a primary thrombophlebitis finally demonstrable, usually in one leg, occasionally in both. Of these twelve, six recovered and six died. Five necropsies were done, with the following findings: cerebral thrombosinusitis and phlebitis in three; purulent meningitis in two as part of a general pyemia, for in one there was also lung abscess, in the other peritonitis.

Of the twenty-two who recovered, six had a frank thrombophlebitis in the femoral vein; four might be attributed to eclampsia or nephritis, and in twelve the cause was undetermined.

That the others had a concealed pelvic phlebitis as the seat of the infections seems likely, as there was no other cause found. In several with detectable phlebitis, the hemiplegia occurred before the latter could be demonstrated, as in the case seen by the senior writer [2] with a colleague. In a few severe postpartum cases, hemorrhage may have been a contributing factor.

The main causes, then, of centric puerperal palsies are cerebral thrombosinusitis and phlebitis arising secondary to thrombophlebitis in the pelvis or leg, frank or concealed; cerebral embolism, and cerebral hemorrhage. Brain abscess and purulent meningitis are part of a general septicemia, usually having evident sites of morbid change other than the intracranial.

PATHOLOGY OF CENTRIC PUERPERAL PALSIES

Apparently the commonest cause is intracranial thrombophlebitis secondary to infectious thrombophlebitis in uterine, pelvic, iliac, femoral or other veins in this region. In puerperal infection, however mild, all the elements necessary to thrombus formation are present—bacteria to injure the intima, and sluggish circulation to favor the deposition of blood platelets on the necrotic wall, which sets in motion the chemical changes leading to clotting. In puerperal infection, streptococci, staphylococci and other pyogenic bacteria are chiefly concerned, and they all show a great predilection for the veins. This thrombophlebitis may remain localized in the pelvic region, but often it spreads by means of the blood stream and lymphatics elsewhere. It is from these pelvic foci that cerebral thrombophlebitis and embolism arise, causing puerperal palsies.

The degree of latency in pelvic thrombophlebitis is remarkable. Sudden aphasia or hemiplegia, or more often pulmonary embolism may be the first evidence of its presence. Pain and swelling are late phenomena in phlegmasia; they are apt to occur only with beginning occlusion of the vessel; the march of the thrombosis from the uterine veins to the femoral vein has been silent.

Sudden embolism, usually pulmonary, is often the herald of an unexpected pelvic thrombophlebitis. Such latent attacks arise more often from pelvic or uterine thrombophlebitis than from phlegmasia. Even in fatal intracranial thrombophlebitis the extent of the phlebitis in the uterine or broad ligament veins may be slight, or it may be insusceptible of definite demonstration. Williams [3] once found at necropsy the femoral vein and all its branches occluded, yet careful measurements were necessary during life to detect any difference in the size of the leg.

The necropsy may read, "Uterus small, firm, clean, appendages normal," as in Hunt's [4] well studied case, and yet the infection had produced widespread fatal cerebral thrombosinusitis and phlebitis.

CEREBRAL EMBOLISM

Mitral stenosis and endocarditis, acute or recurrent, may lead to puerperal palsy from cerebral embolism. Endocarditis is commoner in the left side of the heart, and the way to the brain is direct.

The relationship between pelvic or femoral thrombophlebitis and cerebral embolism is less easily explained. No case of puerperal paradoxical embolism with necropsy was found. The question arises: Can an embolus, however small, pass through the pulmonary capillaries? Siemerling [5] and Daels [6] admit the difficulty, but think that small emboli may pass.

However, it is commonly admitted that bacteria may circulate with the blood corpuscles. Once having passed the pulmonary capillaries, these bacteria may set up a new morbid process on a heart valve or in a vessel on the systemic side of the circulation. From this new thrombo-angiitis, emboli may arise. This may explain some of the sudden hemiplegias with a well recognized focus in the femoral vein. There may be a closer relationship between the frequent pulmonary embolism of the puerperium and cerebral embolism than we recognize, for the clinical diagnosis of pulmonary embolism is frequently missed both in puerperal and general medical cases. There is some reason for our clinical shortcoming, as Karsner and Ghoreyeb [7] found experimentally that a simple embolus interfering with less than an entire lobe of a lung gave origin to little circulatory disturbance, owing to the rich anastomosis of the pulmonary artery between its own branches. Large emboli block the pulmonary artery and kill from the sudden strain thrown on the heart. Smaller emboli give a picture of pleurisy or pneumonia, some perhaps of pulmonary edema, and some remain quiescent.

Pulmonary embolism is the commonest cause of puerperal sudden death otherwise unexplained. Pulmonary embolism, frank or latent, is common during the puerperium, especially in thrombophlebitis, pelvic or in the leg. In the resulting pulmonary infarction, the morbid changes due to a mycotic embolism may involve the pulmonary artery, and a new seat of thrombo-angiitis may arise and emboli be swept to the left side of the heart and the cerebrum. Small intracerebral infarcts may be symptomless if they occur in the meninges. If a small vessel alone is involved, there may be a temporary lapse of consciousness or none at all. There may or may not be variously localized palsies. If a large vessel is occluded, apoplexy is suggested. In puerperal infarction, however small, since the emboli are mycotic, the end-result is thrombophlebitis, and possibly puerperal meningitis and abscess. Again we are apt to forget the lymphatic vessel as a route of infection.

CEREBRAL HEMORRHAGE

Cerebral palsies arising ante partum, intra partum, immediately post partum, or even a few days after delivery, are most often due to cerebral hemorrhage or embolism. Palsies occurring during the second or third week of the puerperium are almost always due primarily to infection; later, and even during the first week, they may be due to infection.

Palsies occurring before or just after birth are often associated with eclampsia or nephritis. Embolism from old or recurrent endocarditis is also a cause. Mitral stenosis, a distinct history of rheumatic fever, chorea and syphilis are suggestive.

2. Talley, J. E.: Puerperal Hemiplegia, M. Clin. N. Am. **8**: 899 (Nov.) 1924.
3. Williams: Text-Book of Obstetrics.
4. Hunt, J. R.: Bull. Lying-in Hosp. **11**: 73 (May) 1917.
5. Siemerling, in Doderlein's Handbuch der Geburtshilfe **2**: 467.
6. Daels, Lequeux and Chomé: Gynec. et obst. **23**: 423.
7. Karsner and Ghoreyeb: J. Exper. Med. **18**: 507, 1913.

Defective blood vessels, the marked changes of blood pressure and convulsions in eclampsia may lead to cerebral hemorrhage. Necropsies in these cases show punctate or even large hemorrhages. In these eclamptic or albuminuric palsies, hemorrhage is not always found; transient congestion and edema of the brain sometimes give origin to the so-called "serous apoplexies," whose symptoms fluctuate and improve so rapidly as to suggest a hysteria. Occasionally a ruptured varix in the brain has been found post mortem.

Multiple hemorrhages in the basal ganglions, pons and internal capsule are found, thus explaining the crossed palsies—especially the left-sided palsy and aphasia. Marked anemia following postpartum hemorrhage and the sluggish circulation following delivery may be contributing factors in puerperal palsies, but neither alone nor combined are they sufficient as a sole etiologic factor.

PHYSICAL SIGNS AND SYMPTOMS

Pelvic or Femoral Thrombophlebitis.—A gradual, progressive, prolonged increase in pulse rate is present in about half the cases. There may be a slight fever or a subnormal temperature. The former appears the more suggestive. Pain in the groin or leg is usually a late symptom, showing that occlusion is beginning. Thrombosis of the uterine and pelvic veins shows few if any significant signs. Embolism, usually pulmonary, may be the first evidence of its existence. The greater number occur among primiparas, especially those who have had operative help in delivery. This thrombophlebitis in the pelvic region is often the forerunner of intracranial thrombophlebitis and embolism.

Cerebral Thrombophlebitis.—This may be slow in development and show prodromes, headache, paresthesia in the fingers of one hand, one extremity or a side, difficulty in speech, and paresis of the faciohypoglossal region, or in a hand. Sometimes blunted or lost consciousness is first noticed. Frequently the chief symptom, hemiplegia, is an early one. Preceding this there may be convulsions, local or general, depending on the amount of the cerebral surface affected by the extravasated blood.

Aphasia, common with right-sided, may occur with left-sided hemiplegia. Recurring vomiting, fever and increased pulse rate are quite common. The urine may or may not contain albumin and casts. Stupor may alternate with a state in which the patient is noisy, restless and irrational. The spinal fluid may show numerous red blood cells. A terminal coma is common, and those who succumb usually do so during the first week following development of palsy. Some recover entirely, some with a partial palsy.

Palsy due to embolism is apt to develop rapidly. It is likely that small emboli, as clumps of bacteria, are often the point of origin of intracranial thrombophlebitis. Detached fragments from such a thrombophlebitis may give the final blow when the process up to this time has been latent. Frank mitral stenosis and an unsuspected endocarditis have been the source of emboli at necropsy. Occasionally we find recorded pulmonary embolism and cerebral embolism with hemiplegia in the same case. Some of the transitory aphasias and partial hemiplegias and monoplegias are probably due to very small emboli, others to eclampsia. In either case they may simulate hysteria.

Puerperal Cerebral Hemorrhage.—The onset is sudden, headache is common, and fever is rare. Hemiplegia or convulsions may open the scene, the latter when the blood invades the ventricles or spreads over the cerebral surfaces. Crossed palsy is not rare, so palsy of the lower part of the face and aphasia may accompany the hemiplegia, whether right or left. Hemianesthesia is recorded occasionally. The hemorrhages occur more often in the cerebral ganglions; they may be multiple, one larger and others smaller. Especially on the superficial brain surface the hemorrhage is often really an extravasation due to thrombosis. Few cases are studied carefully enough to distinguish the two. Hunt's cases are models in this respect. The occasional varices in the vessels of the great ganglions have been mentioned. Puerperal thrombosis of both choroidal veins is remarked by Adami and Nichols.[8] The serous apoplexies of kidney disease and eclampsia may arise and give the same picture as true hemorrhage.

DIFFERENTIAL DIAGNOSIS

To decide that a centric puerperal palsy is due to cerebral thrombophlebitis, embolism, hemorrhage or serous apoplexy is difficult, if not impossible. In cerebral thrombosis the presence of a known phlebitis elsewhere is suggestive. The palsy is usually less brusque than in hemorrhage or embolism. There may be the antecedent headache, slight fever, accelerated pulse, paresthesia, paresis and aphasia. The hemiplegia is, on the whole, slower of development.

Embolism, like hemorrhage, is brusque. The presence of a phlebitis, known or suspected, or of an endocarditis, especially mitral, is more than suggestive. Cerebral hemorrhage is sudden, the palsy complete early. Diseased vessels, as in syphilis and nephritis, are suggestive. In eclampsia, the presence of nausea, vomiting, visual disturbances, edema and albuminuria are all helpful. The palsy due to cerebral congestion or edema in this connection may be transitory or changeable.

PROGNOSIS

Like the symptoms, the prognosis varies with the underlying cause. The underlying causes differ only that in puerperal hemiplegia we have more often infection at work. That the thrombophlebitis is always mycotic seems most likely, but that there is a variation in the virulence of the bacteria present seems a rational explanation of the various conditions encountered. Puerperal centric palsies are grave, but not hopeless. The number of recoveries slightly exceeded the deaths, and only a few of those patients living had permanent palsies left, and even these show improvement. The permanent disability was never so great as the initial palsy.

TREATMENT

These patients stress anew the need of strict asepsis in delivery, and are an argument against vaginal examinations late in pregnancy. Infections will happen in the hands of the most careful and skilful, especially when obstetric operations are necessary. For the careful obstetrician there is comfort in the observations of Williams. He has seen phlegmasia develop in a woman never vaginally examined, and in whom the first elevation of temperature occurred in the third week post partum. He has seen it develop also in the second half of pregnancy in an apparently healthy woman.

Varicose veins in the legs of pregnant women are common, but these apparently rarely give rise to embolism. However, since Aschoff maintains that disturbed blood flow is an important factor in thrombus

8. Adami and Nichols: Principles of Pathology **2**: 563.

formation, early getting out of bed is worthy of consideration.

The treatment of the local thrombophlebitis is a surgical question. The treatment of the palsies does not differ from the nonpuerperal with the exception that massage and manipulation are contraindicated. Detachment of fragments and a consequent embolism is a real danger.

1811 Spruce Street—1906 Walnut Street.

THE CAUSAL MECHANISM OF DIABETES MELLITUS *

ALBERT A. EPSTEIN, M.D.
Associate Attending Physician and Associate Physiologic Chemist, Mount Sinai Hospital
NEW YORK

The presence of an internal secretion in the pancreas and its controlling influence on carbohydrate metabolism have long been surmised. The discovery of insulin fully confirmed this supposition, but the exact mechanism by which diabetes is produced is still problematic. It is now believed that the disease is due to a deficient production of insulin, resulting from a structural or functional change in the islands of Langerhans. In the light of recently acquired knowledge, this explanation seems inadequate. While this disease is undoubtedly due to a lack of insulin, the shortage cannot be ascribed to a simple quantitative reduction in the secretion of this hormone by the pancreas, on either a morphologic or a functional basis.

Gross pathologic affections of the pancreas, in the majority of cases, do not produce diabetes. The degenerative changes in the islands of Langerhans noted in some cases of diabetes are absent in others. The observed changes are by no means uniform, and opinion is divided as to their real significance. The lesion that has been found in the islands of Langerhans is of a degenerative character, and hence, from its very nature, may with equal probability be the result of the disease and not its cause. The question of the relation, or rather lack of relation, of structural changes to the causation of diabetes is best summarized by Allen [1] in the statement: "But it is striking what advanced degeneration of the pancreas can thus be produced, without diabetes, in contrast to the relatively slight changes found in diabetic men and animals in connection with spontaneous diabetes."

When an attempt is made to ascribe the cause of diabetes to a lessened production of insulin on a purely functional basis, the evidence is even more contradictory. Experimentally, it appears that the amount of insulin necessary to control carbohydrate metabolism is relatively small. To produce diabetes in animals, the entire pancreas must be removed, and unless the extirpation is complete, diabetes does not supervene. Thus, mere shreds of pancreatic gland and a little islet tissue can hinder the incidence of the disease. Hédon [2] states that from one-half to 1 unit of insulin per kilogram of body weight is sufficient to maintain a depancreatized dog sugar-free for twenty-four hours. If we interpret this experimental evidence correctly, it must be assumed that every case of diabetes, be it ever so mild, is caused by an extreme reduction of the functional capacity of the pancreas. Moreover, on this basis, the difference between a mild and a severe case in terms of insulin production would be practically nil. In the light of clinical experience, this inevitable deduction seems inadmissible. Thus, the origin of diabetes cannot be explained on either a morphologic or a functional basis. It has also been recently reported that the organs of a diabetic patient, dying in coma, contained insulin in quite large quantities, indicating that death was not due directly to its absence.[3]

Nevertheless, the prompt, symptomatic response that follows the administration of insulin in sufficient amounts to a depancreatized animal or diabetic patient indicates that the disease is due to an insufficiency of active insulin.

The problem of the causation of diabetes resolves itself, therefore, in part at least, into the following propositions: Is the disease due simply to a deficient secretion of insulin, or is it due to a lack of active insulin? This distinction is not academic, and is of the utmost importance in our understanding of the pathogenesis of the disease. The presence of insulin in all the tissues of the body, as well as in the pancreas, even in diabetes, signifies that insulin may be active or inactive; and the deficiency of active insulin in diabetes may be not the result of lessened secretion of insulin, but rather the result of increased or unusual inactivation. The nature and significance of the inactive insulin, present in the different tissues of the body other than the pancreas (normally and in diabetes), forms the subject of a separate study, and will be reported in a future communication. The purpose at present is to call attention to the manner in which insulin can be inactivated in the pancreas, and the relation of this process to the incidence of the disease.

The theory of the inactivation of insulin in the pancreas is based on the simple fact that insulin can combine with trypsin, and, by virtue of this combination, immediately becomes inactive.[4] The process of inactivation appears to be of a chemical nature. It occurs in vitro in the presence of serum and blood, and can also be demonstrated in vivo.

The pancreas contains both trypsin and insulin; the question arises: How can these two substances come in contact, when the one is a constituent of the external secretion and the other a constituent of the internal secretion?

Histologically considered, the pancreas presents two distinct cell groups, namely, the islands of Langerhans and the acini; but there is no barrier between the islands and the acini other than the endothelial walls of blood and lymph capillaries. The unity and close relationship of the vascular supply to both acinous and islet structures of the pancreas is such that changes in the permeability of the capillary walls could conceivably permit the passage of insulin into the areas occupied by the acinous cells, and of trypsin, and other constituents of the external secretion, inward into the blood.

Alteration in the permeability of the walls of capillary vessels is known to occur. Such changes can affect the character and composition of fluids that leave and enter the blood stream. Thus, through a change in the permeability of the capillary walls, insulin could enter the acini and become part of the external secretion, and conversely, trypsin, by reflux action, could

* Read before the Section on Practice of Medicine at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

1. Allen: Glycosuria and Diabetes, Cambridge, Harvard University Press, 1913, p. 462.
2. Hedon, E.: Compt. rend. Soc. de biol. **90**: 920 (April 11) 1924.
3. Baker, S. L.; Dickens, F., and Dodds, E. C.: Brit. J. Exper. Path. **5**: 327 (Dec.) 1924.
4. Epstein, A. A., and Rosenthal, N.: Am. J. Physiol. **70**: 225 (Oct.) 1924.

enter the blood stream and become part of the internal secretion.

Paulesco [5] states that all agents or processes which are capable of causing a paralytic dilatation of capillary vessels (epinephrin and piqûre) produce a glycosuria, while those agents which counteract capillary dilatation hinder the production of glycosuria. The perfusion experiments of Clark,[6] of Murlin and his co-workers,[7] and of McCarthy and Olmstead [8] furnish additional evidence in support of the view that altered permeability of capillary walls can permit the passage of trypsin into the blood or perfusion stream, and, by its contact with insulin, render the latter physiologically inert.

In a series of experiments recently reported,[9] my associates and I have adduced evidence which shows the close relationship of the external and internal secretions of the pancreas. From these studies, it appears that trypsin is the chief factor in the external secretion, which bears a direct relation to the causation of diabetes. Its action is twofold: It affects the activity of insulin, and it causes a glycogenolysis in the liver, with a consequent mobilization of sugar.

The following experiments reveal its action: Infusion of trypsin into an artery supplying the pancreas causes a hyperglycemia and glycosuria. In view of the fact that the pancreatic circulation merges with the portal circulation, the effect observed may be due partly to the action of trypsin on the liver, as well as on the islands of Langerhans and the insulin they produce; for infusion of trypsin directly into the portal vein is also followed by a hyperglycemia and glycosuria.

Infusion of saline solution into the pancreatic artery produces a hyperglycemia and glycosuria, while its infusion into the portal vein, in contrast with trypsin, does not. This would seem to indicate that the infusion of saline solution causes a mobilization of trypsin into the pancreatic circulation, brought about by a change in the permeability of the capillary vessels. That this is a justifiable explanation of the phenomenon is supported by the fact that infusion of insulin itself into the pancreatic artery also causes a hyperglycemia and glycosuria.

Further support of the foregoing deductions is gained from experiments in which certain vital stains (of the azin and azonium groups) were infused into the pancreatic artery. These dyes are known to combine with the zymogenic granules of the acinous cells and fix the trypsin in situ without affecting the islands of Langerhans. Infusion of these dyes into the pancreatic artery does not produce any hyperglycemia or glycosuria.

In another series of experiments, mixtures of insulin with these vital stains were used for infusion. Such infusions do not cause any glycosuria; in fact, a hypoglycemia develops. It will be recalled that infusion of insulin alone causes both a hyperglycemia and a glycosuria. This fact can be accounted for only on the basis that the insulin infused is rendered inactive in the course of its passage through the pancreatic circulation, by the trypsin which is mobilized into the blood stream. In contrast to this, introduction of insulin into the portal vein produces its usual physiologic effect; namely, a hypoglycemia.

If we correlate the foregoing facts, we arrive at an explanation for the results obtained. The vital stains used in the infusions combine with the zymogenic granules of the acini and hinder the trypsin from entering the blood stream of the pancreas, thereby preventing, on the one hand, its action on the internal secretion, or insulin, and, on the other, the access of trypsin to the portal circulation, and its effect on the liver.

The normal metabolism of sugar is comprised of two stages, one phase of which is the storage of sugar as glycogen, the other, its disintegration or utilization as a source of energy. In diabetes, one or both of these processes may be affected. The incidence of the disorder affecting the storage may result from the simple passage of trypsin into the pancreatic and portal circulation, conditioned by a change in capillary permeability, while the disturbance in the utilization of sugar may arise from a shortage of active insulin, brought about by the effect of trypsin on insulin.

SUMMARY

The causal mechanism of diabetes is conceived to be as follows: Changes in the permeability of the capillary vessels can result in the passage of trypsin into the blood stream, and its ultimate entry into the liver via the portal circulation. The first effect of the mobilization of trypsin is a glycogenolysis with a consequent hyperglycemia and glycosuria; the second is the neutralization of insulin secreted into the blood stream, thereby causing a deficiency of active insulin.

The theory presented is in closer accord with experimental evidence and clinical phenomena of diabetes mellitus than any heretofore proposed.

70 East Eighty-Third Street.

ABSTRACT OF DISCUSSION

DR. W. S. COLLENS, New York: We have heard the beautiful theory propounded by Dr. Epstein as to the pathology of diabetes. There has been some experimental confirmation in the work of the Toronto school, insulin having been found in all the tissues of the body in diabetic coma. It would seem that insulin is present but not active. Some recent experimental work has been performed at Cornell Medical School which does not altogether confirm the work of Dr. Epstein. I do not refute his theory in regard to trypsin, but my experiments do not give the same results. In perfusion experiments, in vivo, I made a study of the blood supply of the pancreas and the liver. We injected the arteries of the pancreas. All my experiments were done under an anesthetic that has no effect on the blood sugar level. I have injected the solution into the hepatic artery. Some went to the pancreas; some went to the liver. If I ligated the artery I got the same results as Dr. Epstein. If I injected the solution so that it went only through the pancreas and duodenum, nothing happened. In other words, as a result of perfusion of solution through the pancreas, there is no elevation of blood sugar level or glycosuria. On the other hand, perfusion of the portal vein and hepatic artery caused a rise in blood sugar. Our conclusions were, therefore: First, that saline perfusion of the pancreas does not produce glycosuria, and causes no elevation of the blood sugar level. Second, that perfusion of the pancreohepatic arteries produces glycogenolysis with elevation of the blood sugar level. Perfusion of the pancreatic artery is a very delicate experiment, as the mechanism is very fine. One important conclusion is that these experiments throw some light on the subject of renal diabetes. They show that the reducing substance, or glycosuria, can be produced without elevation of the blood sugar

5. Paulesco, N. C.: Compt. rend. Soc. de biol. **90**: 711 (March 21) 1924.
6. Clark, A. H.: J. Exper. Med. **24**: 621 (Dec.) 1916.
7. Murlin, J. R.; Clough, H. D., and Stokes, A. M.: Am. J. Physiol. **64**: 330 (April) 1923.
8. McCarthy, E. R., and Olmstead, H. C.: Am. J. Physiol. **65**: 252 (July) 1923.
9. Epstein and Rosenthal (Footnote 4). Epstein, A. A.; Rosenthal, N., et al.: Am. J. Physiol. **71**: 316 (Jan.) 1925.

level (that is equal to renal diabetes). Maybe that condition is nothing more than a disturbance of sugar metabolism in the liver.

DR. ELLIOTT P. JOSLIN, Boston: I think that some insulin is found in the pancreas and in the tissues of the body in the patient dying of diabetic coma. This does not invalidate the idea of the efficiency of insulin or the theory of the relationship of insulin to diabetes. Diabetic coma is an accident that can occur in the mild case from overeating and improperly balanced diet. Insulin may be present in small quantities in the pancreas and yet be inactive. This fits in with what Dr. Epstein has found; that is, that insulin under certain conditions is inactive. This is particularly true in infections. What we should do, therefore, at a necropsy on a person dying of diabetes is to determine the amount of insulin remaining in the pancreas not only when the patient has accidentally died in the early stages of diabetes but also in the later stages. I judge that in the advanced stages one can show a difference in the insulin content of the pancreas from that in an early stage.

DR. A. J. CARLSON, Chicago: A number of years ago, we carried out a certain type of experiment for quite another purpose, which has a direct bearing on Dr. Epstein's theory of the mechanism of diabetes. We did a complete ligation of the pancreatic ducts in animals. This work is not new. Occasionally in one of these experiments there will be a temporary hyperglycemia and glycosuria. We made numerous ligations of the pancreatic ducts in dogs to study the trypsin and lipase content of the blood. We thought the pancreas became edematous with retained pancreatic secretion. The trypsin rose normally in the blood. In diabetes very occasionally there was a hyperglycemia. Under these conditions I think there was the maximal chance for occurrence of a mixture of insulin and trypsin in the pancreas. I should like to make the suggestion of the desirability of testing all postmortem diabetic pancreas material for insulin. Unfortunately, many of these tests are merely an attempt to isolate insulin, and then injection into rabbits to determine whether there is insulin, but not by lowering blood sugar. Many other substances lower blood sugar in the rabbit. If one makes these tests, the injection must be done in the diabetic patient or diabetic dog, because then we can see that it occasionally produces building of glycogen and not merely lowering of the blood sugar. Then we are sure we have insulin.

DR. HERMAN SCHWARTZ, New York: Have you been able to keep children to whom you have had to give insulin on the same diet, and stop the insulin? That is, have you been able to raise the tolerance of the patient, after giving insulin for, say, one month of the year?

DR. ELLIOTT P. JOSLIN: No, we have not been able to do that.

DR. A. A. EPSTEIN, New York: The significance of scientific information depends on the source from which it emanates. I will attempt to answer the criticism of Dr. Collens. In Dr. Lusk's laboratory they called my work the "poetry of science." I will now go to the poets' corner. Dr. Collens has found a reducing substance in the urine which he has not identified as sugar. This he has found in traces. My experiments show definitely that sugar is proved to be there in quantitative amounts. Dr. Collens presents a chart which in one instance shows hyperglycemia, and not in other instances, nor any reducing substances. He has superimposed one conception on another by bringing in the explanation of renal diabetes. Work on dogs is different from work on cats. Cats are emotionally more unstable and excitable. Glycosuria is more rapidly produced. The vascular resistance is more comparable to the human being than that of the dog (unless we classify human beings into canine and feline types). But some do not belong; they do not get diabetes. The only way to get into the pancreoduodenal artery is to go to the rear where it lies between the portal vein and the common duct. We must follow the loop surrounding the head of the pancreas, and hook the artery over the index finger. The injection is made directly into the pancreas, compression being made from above. Inversion of the artery causes strangulation of the hepatic branch. Return flow is practically impossible. If that were the case, we should not have had the results obtained with the dyes injected into the pancreoduodenal artery and the portal vein. Dr. Collens did not make control experiments, and he used only saline solution. The work with vital stain is very characteristic. The acinous tissue is practically destroyed after the injection of the vital stain, and there is profuse proliferation of the island tissue. I have not explained what has happened in the experiments of Dr. Carlson, when the duct is tied. I believe the cystic dilation which follows tying of the duct causes compression of the vessels, and there is permeation of trypsin through the lymphatic system. Beadle has produced diabetes by opening up the thoracic duct and draining the lymphatics. There are many problems not yet clear in this question. What I desire to present are a few of the facts warranted by the experiments shown to you and also by means of the definite reaction which takes place between insulin and trypsin in vitro and in the presence of serum and blood; also when insulin is injected into different parts of the body in animals, particularly when trypsin is injected. I do not think we can offer an explanation as regards diabetes. So far as Dr. Joslin's explanation goes, I am in accord with him. I do not want to prove the absence of insulin. The islands regenerate and hypertrophy in diabetes, so there is increased production over the normal; but insulin is rendered inactive, and does not produce its physiologic effects.

CHOLECYSTITIS AND CHOLELITHIASIS IN YOUNG CHILDREN

CRAYTON C. SNYDER, M.D.
PASADENA, CALIF.

The occurrence of gallbladder disease in young children has always been regarded as extremely rare, if not altogether nonexistent. One may search most of the standard works on pediatrics without finding the slightest hint of even the possibility of such a lesion being found in children, and those which do mention it do so only in the most cursory manner. Holt, Kerley and Freer, for example, ignore the subject entirely, and we find Langley Porter, writing in Abt's new work, remarking that "pathological involvement of the gallbladder during childhood is practically unknown, and inflammatory affections of the bile ducts are hardly more common. . . . Gallstone attacks of the adult type do occur in childhood, but so rarely that the records of the cases are medical curiosities." He also notes that Bittner and Lowenberg have reported acute suppurative cholecystitis with perforation and peritonitis in children suffering from typhoid fever. In Fischer's latest edition, five lines are devoted to the subject, beginning with the statement that "authentic cases of gallstones in childhood are rare."

Griffith [1] states that:

> Conditions of this nature are very rare in early life. Congenital obliteration of the bile ducts has already been described. Only exceptionally there exists a congenital absence of the gallbladder. Several such reported cases have been collected by Eshner. Occasionally a roundworm penetrates into the bile duct and sets up an inflammation there. Acute cholangeitis and cholecystitis are very infrequent conditions, but may occur after typhoid fever or from sepsis. Cholecystitis of a more chronic nature is probably not an infrequent sequel of typhoid fever. Tuberculosis of the gallbladder is sometimes seen, and that of the bile ducts is not uncommon, producing small nodules or cavities within the liver. Very exceptionally, gallstones are discovered. Thomson collected

1. Griffith: Diseases of Infancy and Childhood, p. 273.

six reports of gallstones in the new-born, and added another. Still found in medical literature twenty cases of gallstones in early life, to which he added three of his own. In all of these the stones were found in the feces, or in the gallbladder at autopsy; ten were in infants stillborn or dying in a few weeks; four in those from 3 to 9 months of age; one in an "infant"; eight in children from 3 to 14 years old. Khautz could collect but fifteen cases from medical literature, six of these being in infants.

The fact that three cases of gallbladder disease in children under 10 years of age have occurred in my own practice led me to investigate the literature, which soon revealed that the ultraconservative attitude of the textbooks is not borne out by the contributions to periodicals. Though reports of this condition in small children are by no means common, abundant evidence is at hand to prove that the lesion is far less rare than the accepted authorities on pediatrics would lead us to suppose.

It was in 1920 that Reid and Montgomery [2] of the Johns Hopkins Hospital collected "eighteen cases of typhoid fever in children under the age of 15 who either died from, or were operated on for, complications arising in the gallbladder." They prefaced their tabulation with the statement that, "in children, acute suppurative cholecystitis of any kind is rare. Altogether there are only about twenty reported cases." Three years before this Eisendrath had reported two cases, both patients being girls of fifteen, in one of whom was found a chronic cholecystitis with calculi, and in the other, "the concomitant presence of an acute cholecystitis with many calculi and . . . an acute exacerbation of a chronic appendicitis." Neither patient had ever had typhoid. In 1909, Wharton [3] reported the case of a boy, aged 13, who developed acute cholecystitis seven days after the removal of a gangrenous appendix. About two years ago, Kellogg [4] of New York removed fifty-two stones with the gallbladder of a girl, aged 11, and in reporting the case appended a tabulation of sixty-two other cases taken from the literature. These include the fifteen cited by von Khautz,[5] in 1913, but do not take into consideration the typhoid cases of Reid and Montgomery.

There are, then, in the neighborhood of eighty reported cases of gallbladder disease in children, from the case of Gibson, made public in 1722, to that of Kellogg, operated on in 1922—a period of exactly 200 years. Though we are certainly justified in calling the condition "rare," it obviously should not be designated as "practically unknown."

Farr [6] summed up the situation very accurately when he said: "Cholecystitis in children is probably not very rare but is usually unrecognized." It is interesting to note that none of the reported cases—so far as I am aware—were reported by a specializing pediatrician, but always by a general surgeon. As Kellogg says, "cholelithiasis of later childhood does not differ from that in adults, but is very often wrongly diagnosed because this lesion is not considered." Even in children suffering from typhoid fever, there seems to have been considerable delay in recognizing the existence of the gallbladder complications. It is in the hope of stimulating interest in the subject that I am reporting the three following cases:

REPORT OF CASES

CASE 1.—A well nourished boy, aged 4 years, had had severe abdominal pain, nausea and vomiting for two days before examination. There had been no previous illness except measles, at the age of 2, during which the skin and whites of the eyes were reported to have been "yellow." The abdomen was rigid and very tender, and the pain was localized in the appendical region, the rigidity being greatest at the right side. The child vomited during the examination. The temperature was 100.4 F., and the pulse rate, 110. The blood count showed: leukocytes, 15,000; polymorphonuclears, 85 per cent. The urinalysis was negative. Under a diagnosis of acute appendicitis, laparotomy, performed the same day, showed the appendix bound down by a few adhesions, but not sufficiently diseased to account for the symptoms. Exploration of the gallbladder revealed a greatly enlarged organ under considerable pressure, containing a solitary stone the size of a marble. The removal of the stone liberated a quantity of thick dark bile and pus, which on culture proved to contain streptococci, staphylococci and colon bacilli. Drainage of the infected gallbladder was followed by uneventful recovery.

CASE 2.—A poorly nourished boy, aged 5½ years, gave a long history of ill health, for in addition to "digestive upsets" all his life, he had suffered measles, whooping cough and scarlet fever, and had had both femurs fractured in an automobile accident, the reduction of these fractures requiring several operations under anesthesia. All the operative wounds had healed by first intention, however, and the plates used had been removed. One month following the last operation on his legs, there had been a very severe attack of abdominal pain, with nausea and vomiting. The temperature was 102 F.; pulse rate, 110, and urinalysis negative except for a suspicion of bile. The blood count was: leukocytes, 13,000; polymorphonuclears, 78 per cent. The right side of the abdomen was rigid, and palpation over the appendix was very painful. The original diagnosis of acute appendicitis having been concurred in by two consultants, incision revealed an acutely inflamed appendix, which was extirpated. As palpation showed the gallbladder to be much enlarged, the incision was lengthened to permit its exploration. The gallbladder could not be emptied, and seemed to be under considerable pressure. On aspiration, pus and thick bile were obtained, which gave cultures of mixed infection. Cholecystotomy with drainage was followed by uneventful recovery.

CASE 3.—A boy, aged 9½ years, who was fairly well nourished and had had but one previous illness, scarlet fever at the age of 5, presented symptoms that duplicated those of the two preceding cases; there was a trace of albumin in the urine; the leukocyte count was 13,000, and the polymorphonuclears, 75 per cent. Acute appendicitis was diagnosed, but the parents refused operation for two days, during which time all the symptoms were greatly exacerbated, the white blood cell count increasing to 16,000, and the polymorphonuclears to 80 per cent. When consent was finally gained, incision showed the appendix to be only moderately inflamed; but when it had been removed, examination of the gallbladder revealed conditions similar to those found in Case 2, a mixed infection being demonstrated by culture. After the gallbladder had been opened and drained, the child made a good recovery.

COMMENT

A comparison of these cases with some of those more recently reported in the literature accentuates several points of interest. Farr, who reported five cases, believes that a bacteremia is, in some cases at least, an etiologic factor, and he also notes that appendicitis "is a frequent concomitant, if not an etiological factor." In four of these five patients, the appendix was found to be in a pathologic condition. In the cases of Eisendrath [7] and Wharton, appendicitis has already

2. Reid, M. H., and Montgomery, J. C.: Acute Cholecystitis in Children as a Complication of Typhoid Fever, Bull. Johns Hopkins Hosp. **31**: 7 (Jan.) 1920.
3. Wharton, H. R.: A Case of Acute Cholecystitis Following Acute Appendicitis, Tr. Am. Surg. A. **27**: 540, 1909.
4. Kellogg, E. L.: Gallbladder Disease in Childhood, Ann. Surg. **77**: 587 (May) 1923.
5. Von Khautz, A.: Cholelithiasis und Cholecystitis im Kindesalter und ihre Behandlung, Centralbl. f. d. Grenzgeb. d. Med. u. Chir. **16**: 545, 1913.
6. Farr, C. E.: Cholecystitis and Cholelithiasis in Children, Arch. Pediat. **39**: 574 (Sept.) 1922.
7. Eisendrath, D. N.: Gallstones in Infancy and Childhood, Ann. Surg. **66**: 557 (Nov.) 1917.

been mentioned as having immediately preceded the attack of gallbladder disease, and in two earlier cases listed in Kellogg's table—those of Royer, 1864, and Mercat, 1884—there was acute inflammation of the appendix. In Kellogg's own case the appendix "was thickened and adherent, . . . evidently the seat of chronic inflammation." In my second and third cases, the condition in the appendix was evidently related to that found in the gallbladder. In the first case, the connection was not so evident.

In two of my cases there was a history of previous scarlet fever. A similar history is mentioned in but one of the cases from the literature, Farr's third case. This patient, who was a boy, aged 8, had also had "rheumatism," "kidney trouble" and "heart trouble," all rather vague terms suggesting systemic infection. It is probable, however, that a history of scarlet fever may have been omitted from some of the cases in which it really occurred. Many of the reports are fragmentary, and cultures were made only in the more recent examination.

In regard to sex, Farr's series, like my own, was made up exclusively of males. In Kellogg's statistical summary, in which Farr's cases are included, the sex incidence is given as males, twenty-five; females, eighteen; sex not stated, twenty-one. In Reid and Montgomery's series of typhoid cases, eighteen in all: males, four; females, six; sex not stated, eight. It would seem, therefore, as if the disease was a trifle more common among boys than girls, which reverses the sex incidence in adult cases of gallbladder disease, in which females are in marked preponderance.

The symptoms displayed by all my patients are apparently very typical; the same story is repeated in nearly every report. Even when the appendix turns out to be normal, or practically so, we perceive that the classical syndrome of acute appendical inflammation is so consistently in evidence that errors in diagnosis are very likely to occur. When the patient is, or has been, suffering from typhoid fever, even when he is a child, the well known connection between the typhoid bacillus and the formation of stone in the gallbladder is likely to suggest the true nature of the lesion, though the actual occurrence of gallbladder complications in typhoid patients of any age is a very rare thing. Reid and Montgomery quote Holscher, "who made postmortem examinations in 2,000 cases of typhoid fever. Of these, five showed gross pathological changes in the gallbladder, but in only one was there a perforation. More recently, A. W. Webb-Johnson, in his careful study of 2,500 cases of the typhoid fevers observed during the first half of the war, reports only one case of acute cholecystitis in which surgical measures were resorted to, although in fifteen cases the symptoms and signs of acute cholecystitis were sufficiently definite to be recognized."

The diagnosis should not be difficult, especially in older children, if the possibility of cholelithiasis occurring in a child is kept in mind. The presence of stones is mentioned in forty-four of the cases collected by Kellogg, their absence in ten cases, while in ten, nothing is said about it. In Reid and Montgomery's series, stone was found in but a single case, and here the gallbladder affection was not manifested until eight months after the recovery from typhoid fever. My own ratio of one in three would therefore seem to be not far from the average among patients who have no typhoid history.

In closing, I would again emphasize the desirability of more systematic observation and publication of cases of gallbladder affections in the early years of life, as it is only by the accumulation of data that we can hope to see this surgically important condition promptly recognized and adequately treated.

44 South Marengo Avenue.

OUTLYING ACIDOSIS *

PEYTON ROUS, M.D.
AND
D. R. DRURY, M.D.
NEW YORK

Not long ago it was thought that living mammalian cells would die if the fluid bathing them became acid. Now the fact is accepted that cells of some sorts, at least, can survive and proliferate in an acid medium,[1] while, furthermore, there is evidence that the reaction prevailing normally within certain organs of high metabolic activity is frankly acid.[2] In the present paper we shall discuss certain conditions in which there develops a noteworthy and often widespread acidity in the subcutaneous tissue—which ordinarily is faintly alkaline to phenolsulphonephthalein [2]—without any change occurring in the blood reaction. The acidity is a frequent consequence of functional readjustments within the organism; and it leaves no sign of injury, at least when it is temporary.

The shaved body surface of a living rat stained with phenol red (phenolsulphonephthalein) [3] is rendered brilliant pink by the dye, the hue corresponding to that associated with a p_H slightly less than 7.4. If now a minute fraction of a drop of 1:1,000 epinephrin solution, previously brought to this p_H, is injected beneath the skin, no immediate change in color follows, but after about five minutes there appears at the injection site a gradually spreading alteration from pink to yellow, and within half an hour there is ordinarily a yellow patch several centimeters broad, which lessens in size later and disappears, by a peripheral reversion to the pink of its surroundings. If the rat is in process of decolorization when the injection is given, the normal hue will be restored everywhere except in the patch of yellow; and as the latter begins to grow smaller, a rosy border appears about it. As the patch dwindles, so does the border follow it in, coming together as a rosy spot just before all extraneous coloration is lost. It cannot be due merely to hyperemia as such, for it fails to disappear on pressure, though reverting to yellow if the pressure is prolonged. It is due to phenol red that has been changed to the pink, alkaline form as circulation is resumed at the periphery of the region affected.

The explanation for all of the foregoing findings lies, of course, in the ischemia caused by the epinephrin. A local blanching can be noted within fifteen seconds after the injection has been made into an unstained rat or one lightly stained; and the blanched patch spreads, to shrink again after a time, like the yellow patch of stained animals. If phenol red is administered, the rat rapidly becomes pink except for the blanched area, and the hue that this takes on, when it does at length begin

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Rous, Peyton: J. Exper. Med. **18**: 183, 1913. Lewis, M. R., and Felton, L. D.: Bull. Johns Hopkins Hosp. **33**: 112 (March) 1922. Fischer, Albert: J. Exper. Med. **34**: 447 (Nov.) 1921.

2. Rous, Peyton: Science **60**: 1555, 1924; J. Exper. Med. **41**: 451, 739, 1925.

3. Brilliant staining can be effected by the intraperitoneal injection of a 4 per cent. solution of phenol red, brought to p_H 7.4 with sodium hydroxid, and made isotonic with sodium chlorid. For a rat of 150 gm., about 1.8 c.c. is required.

to color, is not the pink of the surrounding tissue, but the yellow of acidity. Later it turns pink.

The acidity developing in the ischemic tissue is doubtless referable in the main to accumulated carbon dioxid; for when the yellow patch resulting from an epinephrin injection is exposed to the air by eversion of a flap of skin,[2] it it rapidly becomes deep pink, a change that is especially impressive when the surrounding tissue has already decolorized. The acidity is greater than can be measured in terms of phenol red, but not much greater, as is shown by tests on rats stained with bromcresol purple or chlorphenol red. The maximum color alteration observed after epinephrin is such as would be indicative, under control conditions, of a fall from approximately p_H 7.3 to about p_H 6.4.

We have ventured to give the name "outlying acidosis" to the condition illustrated by the foregoing simple example, meaning thereby a tissue acidosis independent of the reaction of the blood, because lying beyond the influence of this fluid. That an extensive acidosis of the sort may arise under circumstances frequently met in human beings will now be shown.

When an animal stained with phenol red is submitted to a severe but nonlethal bleeding, there results at first no change in the color of the body surfaces, or they show at most a slightly yellowish cast in the prevailing pink. But soon yellow patches begin to appear here and there, and within a few minutes they may be so numerous as to be almost confluent. They are irregularly rounded, with ill defined borders, and of various sizes up to a centimeter in diameter. If the loss of blood is too great to be sustained, a general yellowing of the body surfaces occurs shortly before death, in which the yellow patching is lost; whereas if the animal adjusts itself well after the hemorrhage, the patches soon merge with the pink of their surroundings. Even when they are well marked, gentle friction over them quickly restores them to pink, but only temporarily unless there is a change in the general condition.

Here again one meets the phenomenon of a localized tissue acidosis, not inconsiderable in degree; and again it would seem due, in great part at least, to a local ischemia, consequent on a reduction in blood volume. That in other part it may be due to lessened oxidation consequent on the diminution in number of the red cells goes without saying; though the fact that the patches tend to disappear as the blood is diluted back to the original volume speaks against the importance of this factor. By the repeated aspiration under oil of 0.2 c.c. of blood from the carotid of the urethanized rat it has been possible to determine the p_H [4] and the percentage of red cells [5] before and after the hemorrhage. The blood reaction is not altered from the previous normal, even when the body surface shows many yellow patches; and the drop in the cell percentage is slight in such instances—as compared with others in which no patches appear—showing that the loss in blood bulk is but ill repaired. The patches quickly ventilate to purple when a skin flap containing them is exposed to the air.

When stained rats are given a hypertonic solution of sodium carbonate by mouth, an outlying acidosis develops at the same time that the blood becomes more alkaline. If the dose is properly gaged the animals turn yellow, at first only in patches, but everywhere shortly before death. Blood specimens taken when the hue is outspoken have a p_H greater than that found at the beginning of the experiment. Everted skin flaps rapidly ventilate to pink.

4. Method of Hawkins, J. A.: J. Biol. Chem. **61**: 147 (Aug.) 1924.
5. Method of Van Allen, C. M.: J. A. M. A. **84**: 202 (Jan 17) 1925.

It is difficult to understand how the paradoxical acidosis here encountered could exist unless the blood supply to the parts showing it were interfered with. That this is the case can be proved by injecting into rats colored with phenol red, receiving carbonate, and bearing the yellow patches, another stain which, under ordinary circumstances, would color the tissues deeply and rapidly. We have employed bromphenol blue which has an indicator range too far to the acid side for the reaction of the tissues to alter the hue. Through a superimposed staining with it, those portions of the body surface already pink with phenol red are turned to a deep plum color, whereas the yellow patches are not altered in the least, but only rendered more prominent by reason of the dark background. Into them, evidently, the influence of the blood carrying the stain does not reach. If no phenol red has been given beforehand, but only carbonate, the rat becomes blue, mottled with patches in which there is no color, in contrast to the controls which stain diffusely.

The outlying acidosis consequent on carbonate administration is encountered only when anhydremia develops, as the hematocrit readings prove. Under such circumstances, with the blood bulk rapidly decreasing, much the same vascular shutdown is known to take place as after a bleeding. Our experiments have shown that a variety of substances and conditions giving rise to anhydremia will cause outlying acidosis; for example, hypertonic dextrose solution by mouth, or purgation with sodium sulphate. The acidoses thus induced are not uninfluenced by the means taken to produce the anhydremia. Stained rats given dextrose solution become intensely yellow before death, a hue attained by controls only several hours post mortem; there is a tendency for the blood p_H to fall; and skin flaps exposed to the air while the animal is yet alive show scarcely any change toward pink, an observation which would suggest that the local acidity is due in the main to acids that are not volatile.

An extension of the observations, with a detailed correlation between the blood and tissue changes, is evidently desirable, for the conditions in which outlying acidosis may be expected are numerous. One cannot doubt its frequency in man under circumstances involving a local circulatory perversion; and it doubtless affects other tissues besides the subcutaneous. The literature supplies not a few indications that a widespread acidosis of the sort must exist in patients with shock or acute anhydremia, or with peripheral circulatory impairment from other causes. The blood in such cases often shows a frank or a compensated acidosis,[6] and the urine acid products in abnormal quantity. The impression seems to be a general one, however, that threatened changes in the reaction of the tissues are regularly averted through compensatory adjustments within the blood, until, indeed, the products responsible for the trouble are formed in such quantity that all regulatory safeguards are overborne. Our experiments prove that this course of events is far from being regularly followed. An extensive tissue acidosis involving a marked fall in p_H can coexist in the same organism with a blood that is more alkaline in reaction than the normal or with one of unchanged p_H. That the blood p_H must frequently fail to change because the acidosis is "compensated" in this fluid does not lessen the significance of the fact that the acidosis in the tissues is uncompensated.

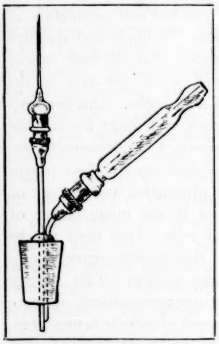
6. Cannon, W. B.: Traumatic Shock, New York, D. Appleton & Co., 1923. Marriott, W. M.: Physiol. Rev. **3**: 275 (April) 1923. Wright, A. E., and Colebrook, L.: Lancet **1**: 763 (June 1) 1918. Wallace, G. B., and Pellini, E. J.: Capillary Poisons and Acidosis, Arch. Int. Med. **28**: 711 (Dec.) 1921.

The possibility suggests itself that tests can be made for outlying acidosis by local injections of an unbuffered solution of indicator. Our tentative efforts in this direction show phenol red to be unsuited to the purpose, owing to the circumstance that the yellow of the acid form is difficult to discriminate through the skin except when a great deal of the dye is present in the tissues. For test purposes, an indicator will be needed that becomes deeply colored under conditions of acidity.

Clinical Notes, Suggestions, and New Instruments

A MODIFICATION OF THE McRAE NEEDLE

J. E. LANE, M.D., NEW HAVEN, CONN.



Modification of McRae needle.

The McRae blood-taking needle is a very useful article. It is hard to clean, however, and rusts easily. In an attempt to overcome these slight disadvantages, I devised a modification of it in the form of the adapter here illustrated.[1]

The adapter is made of a nonrusting material, and its caliber is so large that it is easily cleaned. Any Luer needle of the desired size may be used on it, and the suction end takes a Luer observation tube or rubber tubing without the interposition of the observation tube.

THE HEREDITARY TENDENCY TO HERPES FACIALIS AND URTICARIA

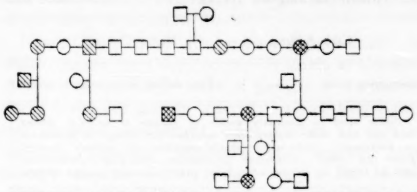
JAMES B. McNAIR, A.M., CHICAGO

White considers the predisposition to urticaria hereditary. But in the study of herpes, no one besides observing a marked predisposition in certain persons seems to have mentioned a possible hereditary tendency. The accompanying illustration shows the occurrence of herpes facialis and urticaria among four generations of one family. Squares represent males, circles represent females; those shaded with parallel lines represent individuals having herpes, and those shaded with cross-lines represent individuals who have both herpes and urticaria.

If the tendencies to herpes and urticaria in this family are inherited, they have indications of being mendelian recessive characters. The great-grandparents may have been heterozygous in this regard; for although they did not have either herpes or urticaria, they may have been able to transmit the tendency to their offspring, as four of their thirteen children had herpes. The diagram also shows, in accordance with the mendelian theory, that if one parent is recessive and the other heterozygous, some of the children may have the tendency. Similarly, if both parents are recessive, all the children may have the tendency. One marriage of what may be an instance of a heterozygous and dominant mating results in all the children being without the tendency. The tendency to herpes does not seem to be sex linked, as either sex may transmit it.

1. Made by Becton, Dickinson & Company.

This family does not represent all the six mendelian matings possible, but as far as represented the tendency to herpes is in accordance with the mendelian theory. However, analogy is no proof, and the tendency may not be hereditary. It is my hope that this presentation may stimulate investigations toward



Occurrence of herpes facialis and urticaria among four generations of one family: Squares, males; circles, females; parallel shading, herpes; cross-shading, herpes and urticaria.

further work in this line and toward the cause, cure and prevention of both herpes and urticaria.

Box 58, University of Chicago.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN

(See THE JOURNAL, May 2, 1925, p. 1338).

H. K. Mulford Company, Philadelphia.

Scarlatinal Antitoxin (Unconcentrated)-Mulford.—It is prepared from the serum of horses treated with subcutaneous injections of toxic filtrate from cultures of scarlet fever streptococci, and also with intravenous injections of the streptococci themselves. It is claimed to contain both antitoxic and bacterial antibodies. Each cubic centimeter neutralizes at least 10,000 skin test doses of scarlet fever toxin.

Marketed in packages of one syringe containing 10 Cc. (prophylactic dose) and in packages of one vial containing 40 Cc. (therapeutic dose).

Scarlet Fever Streptococcus Antitoxin-Lederle (Unconcentrated).—It is prepared by immunizing horses by the subcutaneous injection of the toxic filtrate obtained by growing the scarlet fever streptococcus in broth; also by injecting cultures of the scarlet fever streptococcus. Each cubic centimeter neutralizes at least 10,000 skin test doses of scarlet fever toxin. Marketed in packages of one syringe containing 10 Cc., and in packages of one cylinder containing 50 Cc. with an intravenous injection outfit.

INSULIN-STEARNS (See New and Nonofficial Remedies, 1925, p. 174).

The following dosage forms have been accepted:

Insulin-Stearns 80 Units, 5 Cc.: Each cubic centimeter contains 80 units.

Insulin-Stearns 80 Units, 10 Cc.: Each cubic centimeter contains 80 units.

PROTEIN EXTRACTS DIAGNOSTIC-P. D. & CO. (See New and Nonofficial Remedies, 1925, p. 289).

The following product has been accepted:

Tuna Fish Protein Extract Diagnostic-P. D. & Co.

Prepared by the method given in New and Nonofficial Remedies, 1925, p. 289.

Education of Public in Health Matters.—The public conscience is now awake, as it never has been before, to its duty toward the individual, and part of the awakening consists in realization of the value of modern discovery in its applications to bodily and mental health. Moreover, all that is being done is affected by the better general education of the community at large, by the higher standard of life in respect of food and cleanliness.—McVail, J. C.: *Proc. Roy. Soc. Med.* **18**:61 (Dec.) 1924.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, JULY 4, 1925

THE REGENERATION OF BLOOD IN ANEMIA

In their discussions of the treatment of the secondary anemias, the current textbooks on therapy are singularly reticent or noncommittal about procedures intended to cause a restitution of the lost blood. A generation or more ago, one would have found "hematinics" discussed in considerable detail, special attention being devoted to the pharmaceutic niceties of a large variety of preparations of iron. "Iron," Sir Lauder Brunton told his students, "forms an important constituent of the red corpuscles, and in all cases of anemia iron is employed. It is sure to be tried, whether it does good or not." A decade later, Cabot was somewhat more cautious; for he was "not convinced that iron and arsenic hasten the processes of regeneration, but if the stomach is in good condition there is no objection to their use." Today the greatest stress is placed on "nutritious alimentation," a suggestion almost as vague in its specific application as are the dicta of drug therapy.

It is important to realize that the regeneration of blood may be something more than the restitution of iron to the blood. The quantity of this element actually needed may be comparatively small. Hemoglobin itself is a highly complex and chemically peculiar compound. Its organic precursors are by no means known at present. It is not improbable that the provision of these specifically is as imperative as is the supply of iron in any particular form. Furthermore, the proper functioning of the hematopoietic apparatus, whatever it may be, deserves consideration as well as do the materials with which it may act.

The significance of diet has been brought into added prominence through the studies of Whipple and his collaborators in recent years. They have brought convincing evidence that in simple anemias the amount of hemoglobin regenerated in the body can be modified at will by the character of the food administered. Thus, under carefully controlled conditions, certain dietary regimens may preserve experimental animals in seemingly excellent physical condition in respect to weight, appearance and activity without any amelioration of an existing anemia, whereas the inclusion of meat or liver may produce immediate regenerative responses not imitated by equivalent doses of iron or preformed blood pigment. More recently, Whipple and Robbins[1] have repeated their experiments under conditions of more severe and prolonged induced anemia. Here, again, liver feeding has remained the most potent factor studied for the sustained production of hemoglobin and red cells, as indicated in various tables. This favorable and remarkable reaction is invariable, no matter how long continued the anemia level, no matter how unfavorable the preceding diet periods may be, and regardless of the substances given with the liver feeding. Muscle feeding in dogs with severe anemia gives a favorable reaction in many cases and only a moderate reaction in others. Again, the heart muscle seems to be somewhat more potent in hemoglobin and red cell production as compared with skeletal muscle. Whipple and Robbins consequently gain the impression that the body stores in the liver parent substances, which are used in the construction of hemoglobin and red cells. This confirms their belief, gained from work with dogs having bile fistula, that the liver is concerned fundamentally not only with metabolism of bile pigments and their parent substances but also with the production and storage of some parent substances used in the manufacture of finished hemoglobin and red cells. One need not be surprised, they add, to find that parent pigment substances are stored in striated muscle. This storage might be concerned with the emergency needs of these muscles to maintain their content of muscle hemoglobin.

In one respect, the earlier report of Whipple and his collaborators demands correction. During brief periods of anemia, conventional treatment with iron seemed to be without effect. They now find, however, that long continued severe anemia due to hemorrhage may be associated with iron depletion, and these experiments in dogs show a favorable reaction to treatment with iron. The same is probably true for human beings. The reaction to iron may vary, yet the favorable reaction to liver feeding is a sustained and uniform maximum.

One of the reasons commonly advanced in commendation of the use of green vegetables in the diet has been their content of iron and their supposed blood-building potencies. The latest studies indicate, however, that the green vegetables are only moderately favorable food factors for the regeneration of hemoglobin and red cells. Robbins and Whipple point out that chlorophyl may be like hemoglobin in its chemical structure, but the normal dog cannot utilize much, if any, of the

1. Whipple, G. H., and Robscheit-Robbins, F. S.: Blood Regeneration in Severe Anemia, I, Standard Basal Ration Bread and Experimental Methods, Am. J. Physiol. **72**: 395 (May) 1925. Robscheit-Robbins, F. S., and Whipple, G. H.: Blood Regeneration in Severe Anemia, II, Favorable Influence of Liver, Heart and Skeletal Muscle in Diet, ibid., p. 408. Whipple, G. H., and Robscheit-Robbins, F. S.: Blood Regeneration in Severe Anemia, III, Iron Reaction Favorable—Arsenic and Germanium Dioxide Almost Inert, ibid., p. 419. Robscheit-Robbins, F. S., and Whipple, G. H.: Blood Regeneration in Severe Anemia, IV, Green Vegetable Feeding, ibid., p. 431.

chlorophyl nucleus for hemoglobin construction, even under maximal stress. These recent laborious experiments do not necessarily furnish the last word in respect to the dietary that produces the preferred nutritive conditions in the relief of anemia; but we can only agree with the Rochester investigators that food factors deserve serious study under controlled conditions by physicians who would understand the complex anemias associated with human disease.

OXYGEN THERAPY IN PNEUMONIA

Two hundred and fifty years ago, John Mayow first showed that something necessary for life is taken from the air. It was a forecast of the oxygen requirement of the body, although to this older English physiologist the requisite air-borne substance was "spiritus nitro-aereus." Lavoisier was the first, however, to understand the significance of oxygen from a truly chemical standpoint. Before the end of the eighteenth century, he realized that the respiratory exchange is the result of a process of combustion going on in the body, by which the carbon and hydrogen of the animal tissues are united with oxygen to form carbon dioxid and water. Through this conception of "vital oxidations," the importance of oxygen was given decided emphasis. A further great step in advance came with the demonstration that oxygen is not held in the blood merely dissolved in the plasma as nitrogen is, but becomes transported for the most part in combination with hemoglobin. The blood pigment thus is indeed a respiratory pigment or oxygen carrier.

In view of these facts, it is not surprising that oxygen should early have been hailed as a panacea. It was, to quote a recent writer,[1] a romantic idea to have separated from the air its life-sustaining principle, and accordingly oxygen inhalations were used for almost every conceivable malady, from hysteria to bubonic plague, and in almost every conceivable form—even in the form of oxygenated bread, which became a therapeutic fad. But the oxygen bubble burst.

There are several reasons why some of the earlier hopes were not realized and why some of the supporting theories were unwarranted. One was supplied with the demonstration that oxidation does not occur primarily in the blood stream but rather in the tissue cells. Oxygen inhalation could not be demonstrated to increase tissue oxidations, as might be expected from the ill founded analogy of fanning a flame. Furthermore, although the tissues are continually using oxygen and thus creating a sort of vacuum for it within the metabolically active cells, there seems as a rule to be a reasonable surplus available in the blood stream. The arterial blood carries nearly its maximum load of oxygen under ordinary circumstances; and the venous blood returning from the oxygen-hungry tissues rarely represents a depletion to less than three fourths of the initial oxygen content. Under such circumstances it is not easy to bolster up an argument for "suboxidation," and consequently special oxygen administration seems rarely to be called for.

Nevertheless, there are undeniably conditions in which oxygen want does occur. It arises at altitudes at which the partial pressure of the gas in the atmosphere is reduced and the arterial blood no longer carries its usual complement. The studies of man in mountain climbing, ballooning and aviation have brought accurate evidence that, with a fall in the tension of oxygen in the alveolar air, anoxemia may become a serious reality. The essential cause of altitude sickness is lack of oxygen. It was Paul Bert, in 1878, who first furnished clear experimental proof that the abnormal symptoms and dangers depend on the imperfect aeration of the arterial blood with oxygen. Today this is no longer debated.

There are conditions other than low barometric pressure that may produce anoxemia. It may occur after hemorrhage and in anemia; it may follow the restriction of a free influx of air into the lungs; and it is a demonstrable symptom of many cases of lobar pneumonia. Stadie has observed, in a series of thirty-three pneumonia patients, that not one recovered whose arterial saturation was below 70 per cent. As Binger has pointed out, if we consider that the patient with pneumonia has to fight a severe, progressing infection with its associated toxemia, it is perfectly clear that the added disadvantage of anoxemia may be such as to overcome him. And it becomes perfectly apparent that it is to his advantage to save him from the extra burden on his cardiorespiratory and central nervous systems which anoxemia involves. Accordingly, Binger [1] has advised a return to the principle of early, continuous oxygen therapy in such patients. He does not deny the abject failures that the hurriedly summoned oxygen cylinder of two decades ago will recall to many physicians. "We might as well administer tincture of digitalis by spraying the drug in an atomizer," Binger pointedly comments, "as giving oxygen by holding a funnel several inches away from a patient's nose and mouth. To administer oxygen effectively, we must raise the partial pressure of the gas in the patient's alveolar air, and this should be done, as far as is practicable, quantitatively as with any other drug." The "ideal" procedure is the use of a suitable oxygen chamber in which the artificial atmospheric conditions can be accurately controlled. Few localities offer such facilities, but lately various tentlike devices have been described that fit over the bed and in which the atmosphere can be raised to a desired level of oxygen. Blood analysis will give evidence of the efficacy of any scheme of administration. Binger's experience with the chamber at the Hospital of the Rockefeller

1. Binger, C. A. L.: Oxygen Therapy in Pneumonia, Bull. New York Acad. Med. 1: 17, 1925.

Institute, New York, shows that 40 per cent. oxygen, or approximately twice the normal atmospheric concentration, is sufficient to raise the blood to as near normal as it can be. If 40 per cent. does not do this, it is unlikely that a higher percentage will. At any rate, oxygen therapy deserves renewed consideration when an adequate rationale for its application can be developed.

FOOD POISONING IN GREAT BRITAIN

The growing interest taken by public officials and others in so-called food poisoning has been stimulated by two recent publications of the British Medical Research Council.[1] Injurious effects attributable to food may be due to diverse factors, in themselves of varying degrees of interest and sanitary importance.[2] At the same time, certain familiar groups of symptoms are by common consent regarded as "due to food poisoning." This is especially true of those outbreaks in which the paratyphoid or salmonella bacilli are concerned, doubtless because in this form of disease the gastro-intestinal symptoms are acute and because the illness can often be readily traced to some particular article of food taken. It is this group of bacilli that is dealt with in the first of the reports cited. Perhaps the point of most general interest in a paper mainly technical is the thesis that heat-resistant toxins produced by paratyphoid bacilli are sometimes the cause of poisoning through the use of heat-preserved food which long before had been contaminated by these organisms. It must be admitted that the epidemiologic evidence for this conclusion is quite unconvincing, and that the animal experiments advanced in support of the main assumption are singularly uncontrolled. Much more work and more careful work will be necessary before this somewhat unusual contention of the English authors is justified.

Nature of Outbreaks of Food Poisoning

	Number of Outbreaks
Probably not true food poisoning	3
Due to members of the salmonella group	66
Due to members of the dysentery group	4
Due to members of the B. botulinus group	1
Definite chemical origin	2
Cheese-poisoning outbreaks	8
Mild evanescent outbreaks	9
Undetected bacterial origin	7
	100

In the second paper is given a record of 100 consecutive outbreaks of food poisoning in Great Britain, "taken without selection, just as they were reported to the authors and investigated at the time." The accompanying table summarizes the results.

The high proportion of food poisoning cases attributed to the group of salmonella or paratyphoid bacteria will be of especial interest to epidemiologists in this country. The figures are quite different from those obtained by Geiger[3] in his analysis of 749 reported outbreaks of food poisoning in the United States. Indeed, it will surprise most American students of food problems to be informed that so large a proportion of reported "food poisoning" outbreaks can be traced to their source—by even the most experienced investigators.

The impression of hasty judgment on the part of the English workers is deepened by an examination of what the authors regard as the "essential particulars" of the hundred outbreaks. Case 2 was said to be a small outbreak involving two families and was attributed to canned beef. "The rest of the beef was not specially followed up, so probably there were other cases." Case 3: "The only sufferer was a man who ate two cans of sardines." Case 4: "The evidence incriminating the salmon is not conclusive, while one person who ate some of it escaped." This outbreak, however, is tabulated as one in which "the vehicle of infection" was salmon. Case 96 also is included among the salmon outbreaks, although among the "essential particulars" it is stated that "while the salmon was probably the cause of the illness, no definite proof is available." In a number of instances it is alleged that a living paratyphoid bacillus was isolated from the canned food. Meat, salmon, fruit and tomatoes are listed as the "peccant foods." In the discussion of an outbreak at Birmingham attributed to "a tin of Canadian tomatoes," the authors go so far as to assert, "There is no doubt from the facts that this organism [i. e., a living paratyphoid strain] was present in the can before opening and had survived any 'processing' given to the tin." Most bacteriologists will question the likelihood that the nonsporing paratyphoid bacilli can survive the ordinary canning temperatures even if it is assumed that the tomatoes and salmon were imperfectly processed. In another instance, fresh tomatoes are considered the vehicle of paratyphoid infection, although "the evidence is not perfectly conclusive." Canned apricots (Case 40) are also considered the vehicle of infection with a paratyphoid bacillus (*B. aertrycke*) on astonishingly slender evidence.

Altogether, it cannot be said that an uncritical compilation of "100 outbreaks" adds materially to our knowledge of the obscure and difficult problems of food poisoning. It is truly remarkable that detailed tabulations should be made and conclusions drawn on the basis of such evidence as is presented in the appendix of the British report. Further investigation of alleged instances of food poisoning is just as necessary, just as difficult and somewhat more involved than it was before the work of the English writers.

1. Savage, W. G., and White, P. B.: An Investigation of the Salmonella Group, with Special Reference to Food Poisoning; Food Poisoning: A Study of One Hundred Recent Outbreaks, Medical Research Council, London, 1925, Special Reports 91 and 92.
2. Jordan, E. O.: Food Poisoning, Chicago, 1917, p. 112.
3. Geiger, J. C.: Poisoning by Food Probably Due to Contamination with Certain Bacteria, J. A. M. A. 81:1275 (Oct. 13) 1923.

Current Comment

MEDICAL TESTIMONIALS

The layman is not the only offender in giving testimonials for nostrums; some physicians are just as bad. A government official whose work is devoted largely to investigating frauds in foods and drugs recently wrote to THE JOURNAL regarding the difficulties the government had over testimonials given by unthinking or venal physicians. He said in part:

> You probably realize that one of the greatest handicaps in controlling or eradicating false advertising in connection with medicinal products are testimonials of physicians. One meets them at every hand. Particularly abundant are they in connection with the mineral waters, radium products, vitamins and gland therapy. I am enclosing herewith copy of what might be considered a multiple testimonial by a number of medical men located in ————. You may be interested to learn that we proceeded against the ———— Water Co. for using the mails improperly and the result was that the company and its agents entered into a stipulation to discontinue the fraudulent advertising then in use. The method resorted to is indicated by the testimonial enclosed. I think you will agree with me that medical testimonials, and particularly the one under consideration, offer material barriers to our work.

The testimonial to which the official called particular attention was one issued by the exploiters of a so-called mineral water. It was, in a way, a community affair, being signed by no fewer than twenty physicians, all living in the same town from which the mineral water came. The testimonial read:

> I voluntarily affix my signature in support of the claims made for the medicinal value of ———— water and its therapeutic action in such conditions as Diabetes, Nephritis, Arterio-Sclerosis, High Blood Pressure, Excessive Uric Acid and kindred diseases of the kidney and bladder.

Now, the "claims made for the medicinal value" of the water in question were fraudulent. In fact, about ten years ago the government successfully prosecuted the exploiters of this water for making these claims on the bottles and forced them to delete the claims. The water concern, like many "patent medicine" fakers, having found that it could not lie on the trade package because the Food and Drugs Act had teeth, then confined its false statements to circulars that did not accompany the trade package, and were, therefore, not subject to the Pure Food Law. Fortunately, the fraud order activities of the Post Office Department made it possible to demand of this concern a degree of truthfulness that it evidently would not assume on its own initiative. It is a sorry spectacle, however, to see reputable members of the medical profession—all but two of the twenty signers of this testimonial were members of the American Medical Association—lending their names and scientific standing to back up fraudulent claims made for nostrums, whether these nostrums happen to be drugs or mineral waters. Twenty years ago the testimonial habit was common among physicians. At that time THE JOURNAL published, week after week, the names of individual physicians with the claims for which they were standing sponsor. At the same time the Propaganda Department of THE JOURNAL kept a card index of all American physicians who were giving testimonials. This file eventually contained more than ten thousand names and its compilation kept one clerk constantly busy. With the publicity given by THE JOURNAL, the testimonial habit waned, and during the last five or six years the file index has been discontinued. Is it going to be necessary again to hold up before the entire profession the names of individual physicians who have so far forgotten their professional obligations as to become *particeps criminis* in the exploitation of medical humbugs?

THE BANKERS SHARES SCHEME

Physicians throughout the country have been circularized recently by either one concern operating under different names, or by two or more concerns that use exactly the same advertising matter. The scheme is that of offering for sale "Bankers Shares" of the Ford Motor Company of Canada, Ltd. The physician is told that, as he is the owner of a motor car, he is "hereby extended the privilege of subscribing for, not to exceed Fifty [or some other specified number] Ford Motor Company of Canada, Ltd., Bankers' Shares at $10 each." The offer, however, is sent indiscriminately to physicians whether they own motor cars or not. The "Special Subscription Privilege" blank is an imposing looking affair with an orange colored border, a serial number and a date limit. The usual get-rich-quick line of "selling patter" is used, the physician being told that those who invested in Ford of Canada in 1904 have received more than $32,000 for each $100 invested; he is told, further, that if Ford of Canada grows to be as large as Ford of the United States, the "$100 invested in Ford of Canada should then be worth more than $15,000." The officers of Ford Motor Company of Canada, Ltd., are then named, and the impression is given that this company is behind the sale of these so-called Bankers Shares. The facts are that the Ford Motor Company of Canada is not even remotely concerned in the offering of these Bankers Shares, the only outstanding stock being the capital stock of $100 a share par value, which is quoted on the open market and the various exchanges. Those operating the "Bankers Shares" scheme have, it appears, acquired a block of Ford Motor Company of Canada stock which at the present time is quoted around $490 a share. They have then divided each share up into 100 parts which they call "Bankers Shares," and offer these to the physicians of the country at $10 a "share." In other words, physicians "are extended the privilege" of paying $1,000 a share for Ford Motor Company of Canada stock when the same stock can be purchased on the open market for less than $500 a share. One of the concerns, or, if it is one concern, one of the names under which it operates, has already been restrained from doing business in New York by an injunction issued some months ago on the grounds that the scheme is one that is calculated to deceive. The rest of the country is still "easy meat." Physicians will do well to throw these "Special Subscription Privilege" blanks into their waste baskets.

HEAT IN THERAPY

Heat in therapy involves a diversity of procedures, some of which have attained the dignity of clinical usage while others have remained in the less elegant but none the less beneficent routine of household practices. The thermotherapy of dry heat requires special technical devices for its application, whereas even a novice usually can apply the hot poultice under suitable conditions to bring relief. Heat may be not only a manifestation of pathologic conditions, as in inflammation, but also an agency for relief and cure. It is therefore important to understand the mechanisms through which it may influence the bodily processes. Pemberton [1] has recently summarized the observations made on the effects of exposing the human body to external heat in the form of radiations from electric lamps, the so-called "bake." It results in a heightened blood flow, an increased metabolism, and in the elimination of acids, chiefly carbon dioxid, which escape through the lungs, urine and sweat in the order of magnitude named. This leaves an excess of alkali in the blood, which then changes its reaction, becoming more alkaline. In the compensatory effort to meet this situation, the excess of alkali is eliminated through the sweat and urine. It follows from this that the benefit of hot packs and sweats in nephritis may be due not solely to the elimination of nitrogenous substances, as so long believed, but also, in part at least, to the relative alkalosis brought about by the elimination chiefly of the acid-forming carbon dioxid. The influence of these processes on the acidosis of nephritis or other conditions is obvious. There are also indications that harm may result from ill advised or undue application of heat leading to such alkalosis; for tetany may arise as a consequence of the latter. Even the use of heat, therefore, may be overdone.

MEDICAL LICENSURE IN ARKANSAS

Statistics regarding medical licensure published recently [2] show that Arkansas is one of the few states in which graduates of low grade medical schools still find easy access. As also shown in the statistics, the blame rests with the medical practice act, which provides not only for a board of medical examiners but also for a separate board of eclectic medical examiners; it was through the latter board that low grade graduates were licensed during the last several years. That the regular board of medical examiners has upheld reasonably high standards of medical education and licensure was also set forth in the statistics, and that statement has recently been supported in the report of a special committee appointed by the Arkansas Medical Society.[3] The report of that committee shows that the regular board of medical examiners has satisfactorily performed its duties and also that standards of medical licensure have been considerably advanced in Arkansas since 1903. Formerly the responsibility for medical licensure rested with county boards in the several counties of the state. In 1903, a new practice act provided for the three separate boards representing the regular, or nonsectarian, homeopathic and eclectic medical boards. Herein rested the weakness of the law of 1903, as one single competent board could have done the work more efficiently and with less confusion. In 1909 the law was strengthened by permitting the boards to examine only graduates of reputable medical schools, and in 1921 the rule of the regular board provided that only graduates of Class A medical schools were eligible for examination. However well this one board did its work, however, it could not safeguard the public against the incompetent graduates of low grade medical schools so long as a separate board was willing and continued to license them. Is it not time that the law be further amended so that the responsibility for licensing all who are to treat the sick will be in the hands of a single competent board of examiners?

1. Pemberton, Ralph: A Summary of the Effects of External Heat on the Human Body, Am. J. M. Sc. **169**: 485 (April) 1925.
2. State Board Statistics, J. A. M. A. **84**: 1339 (May 2) 1925.
3. Editorial, J. Arkansas M. S., May, 1925, p. 263.

Association News

THE ABRAHAM JACOBI MEMORIAL FUND

The committee for the Abraham Jacobi Memorial Fund in the Section on Diseases of Children wishes to make the following report for the year ending May 23, 1925:

Receipts:		
Balance on hand, June 1, 1924, after paying expenses for previous year		$ 609.40
Received from subscriptions, June 1, 1924, to May 23, 1925	$857.50	
Interest on bank deposits	20.85	878.35
		$1,487.75
Expenditures:		
Expenses, foreign guests' 1924 meeting	$300.00	
153 copies of Transactions	232.50	
Secretary's expenses for postage, mailing, etc.	46.55	
Questionnaire for Committee on Infant Foods, appointed by the section	90.20	669.25
Balance on hand, May 23, 1925, to be placed in the sinking fund		$ 818.50

The amount left each year after paying expenses is to be put into the permanent sinking fund, which with its accrued interest will be allowed to reach the sum of $10,000, after which its interest will be spent for pediatric grants and investigations, for the expenses of foreign guests, etc.

The usual early subscriptions will cover the cost of Transactions sent to the members, for secretarial expenses, such as printing and mailing, and the balance added to the sinking fund.

At the suggestion of Drs. Talbot and Mulherin, the committee has decided to ask that all who feel so inclined donate an amount additional to their usual subscription to be placed at once in the sinking fund. Friends of the Section on Diseases of Children who read this report may know of generous contributors to child welfare projects who will give toward the establishment of this permanent fund.

The committee is now sending out blanks for subscriptions for the coming year.

Respectfully submitted.

CLIFFORD G. GRULEE, Chicago, Chairman.
HAROLD K. FABER, San Francisco.
W. A. MULHERIN, Augusta, Ga.
FRITZ B. TALBOT, Boston.
FRANK C. NEFF, Kansas City, Mo., Secretary.
FUND COMMITTEE.

Standardized Beds.—According to *Colorado Medicine*, the U. S. Department of Commerce recommends that hospital beds be standardized and that they be 78 inches long, 36 inches wide and 27 inches high. At present, it is said, hospital beds are made in thirty-three different lengths, thirty-four different widths and forty-four different heights.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Dr. Hoskins Resigns.—Margaret M. Hoskins, Ph.D., has resigned as professor of microscopic anatomy at the University of Arkansas School of Medicine, Little Rock, to accept an appointment at the University and Bellevue Hospital Medical College, New York.

Personal.—Dr. Leonard R. Ellis has been elected president of the board of health of Hot Springs National Park, and Dr. Austin F. Barr, the new full-time city health officer, secretary.——Dr. John T. Palmer has been reappointed to the state board of medical examiners.——Dr. Francis Michael Smith, Franklinton, La., has been appointed health officer for Jefferson County and assumed his duties July 1.

CALIFORNIA

No Diphtheria in Contra Costa County.—For the first time in the history of either Richmond or Contra Costa County there are now no cases of diphtheria under quarantine, according to the city health officer, who attributes this record to the large number of children who have been immunized against the disease. He states that wherever diphtheria has occurred recently in his territory, it has been among persons who have not been immunized by means of toxin-antitoxin. More than 6,000 children in the district have been immunized.

Health Officers Appointed.—Dr. William J. Quinn, Eureka, has been appointed health officer of Humboldt County to succeed Dr. Francis R. Horel.——Dr. John W. Truxaw has been appointed health officer of Anaheim to succeed Dr. George A. Paige, and Dr. Gilbert S. Bovard of Sierra Madre to succeed Dr. Edward L. Jackson.——Dr. Joseph W. Camp has been appointed health officer of La Habra.——Dr. Smith McMullin has been appointed health officer of Yuba City, to succeed Dr. William L. Stephens of Meridian.

Is This Another Religio-Medical Masquerade?—Allen Mills, a chirothesian of Richfield, was recently charged with violation of the medical practice act. He stated, according to the state board of medical examiners, that he made a positive diagnosis by the examination of the pulse, by examination of other parts of the person of the patient, and by "iridiagnosis." Mills claimed to be an ordained minister of the Chirothesian Church of Faith. M. T. Larkin, a chirothesian of Los Angeles, was also charged recently with violation of the medical practice act. His place of business is reported to have contained a large quantity of remedies, the bottles being labeled for such diseases as cancer, paralysis, rheumatism and tumors; on the wall was a diploma from the Western College of Drugless Therapeutics and a sign reading "We diagnose your ailments if you wish us to do so." A pamphlet entitled "The Chirothesian" states that the board of trustees of the church intend the word "Chirothesian" to "have as much significance as that of minister of an orthodox church or as even that of M.D. after any person's name. The word "Chirothesian" was adopted "as the title under which the ordained ministers of the church should advertise and practice their healing work." The pamphlet says also that: ". . . While working under this title healers ordained to the work are protected from annoyance by the state medical board."

CONNECTICUT

Unusual Amount of Typhoid.—The state department of health reports that typhoid fever has been more prevalent throughout the state thus far this year than for any similar period in the last three years. There were fifty-two cases in the first four months, and fifteen deaths. The increase was not due to any sudden outbreak. The cases were distributed over the various months in the season when typhoid is usually least prevalent.

DELAWARE

State Accepts Brandywine Sanatorium.—The last legislature, just adjourned, accepted the offer of the Delaware Antituberculosis Society to take over by the state the Brandywine Sanatorium, which was owned and controlled by the society. The Brandywine Sanatorium is now a state institution and was turned over free of indebtedness.

ILLINOIS

Narcotic Law Violations.—A federal grand jury in Chicago indicted, May 29, it is reported, Dr. William C. Bridge, Elgin, for violation of the Harrison Narcotic Law. Dr. Bridge was held to trial on $2,500 bonds.——Dr. Edwin V. Heaton, Danville, was arrested, May 22, for violation of the Harrison Narcotic Law, and at a preliminary hearing, bonds were fixed at $3,000, it is reported.

Joint Society Meetings.—At the joint meeting of the Rock Island and Scott County medical societies, East Moline, June 9, Dr. Dean Lewis, Chicago, spoke on "Fractures and Their Complications"; Dr. Oliver J. Fay, Des Moines, Iowa, on "Some Bone Lesions of Obscure Etiology," illustrated with lantern slides, and Dr. James F. Cooper, New York, medical director of the clinical research department, American Birth Control League, on "Birth Control." About 150 were present at the dinner.

Chicago

Personal.—Dr. Erwin P. Zeisler has been elected president of the Chicago Dermatological Society.

Editor Resigns.—Joseph J. Weber, for six years editor of the *Modern Hospital*, has resigned to become director of Grace Hospital, New Haven, Conn. Mr. Weber formerly was associate director of the Boston Dispensary, Boston, and executive secretary of the committee on hospitals of the New York State Charities Aid Association.

Professor Michelson Receives Distinguished Service Professorship.—At the one hundred and thirty-seventh convocation of the University of Chicago, June 16, Prof. Albert A. Michelson, head of the department of physics, was appointed to the first of the Distinguished Service Professorships recently established at the university with a special fund of $200,000, the gift of Martin A. Ryerson, formerly president of the board of trustees and donor of the Ryerson Physical Laboratory.

Opinion of Public Health Institute.—Following the receipt of many requests for an opinion of the Public Health Institute of Chicago, the official *Bulletin of the Chicago Medical Society* (June 20) states that it is an unethical institute in every sense of the word; that the physicians who work for the institute are not members of the Chicago Medical Society, "some by choice and some by expulsion," nor has the institute any well known genito-urinary specialist on its staff; that the institute is a private corporation practicing medicine and charging fees; that it uses full page advertisements as a means of procuring business, and that physicians who connect themselves with the institute will be brought before the ethical relations committee of the Chicago Medical Society.

INDIANA

Personal.—Dr. and Mrs. Homer H. Wheeler, Indianapolis, have donated a large portion of land north of Fiftieth Street to the board of public works for park purposes.——Dr. Alfred Henry, Indianapolis, has been reelected president of the Marion County Tuberculosis Association.——Dr. Charles R. Sowder, Indianapolis, has resigned as president of the Clinical Society of the Methodist Hospital.

Hospital News.—Construction has been started on the $300,000 nurses' home at Illinois Street and Fall Creek Boulevard, Indianapolis, on the property of St. Vincent's Hospital.——Dr. John F. Loomis has been elected president of the staff executive committee of the Grant County Hospital Association, Marion; Dr. Edwin M. Trook, vice president, and Dr. Miles J. Lewis, secretary-treasurer. They will take office in September.——The Sisters of St. Joseph will erect a $100,000 fireproof hospital with a capacity of twenty-five beds, at Elwood.

Responsibility for Public Water Supplies.—Recently a jury in Adams County returned a verdict of $9,000 against the city of Fort Wayne and the Pennsylvania Railroad Company in a suit which held these corporations responsible in an outbreak of typhoid fever of more than 150 cases and twenty-four deaths, as the result of a cross connection between the industrial water supply of the Pennsylvania shops and the public water supply of Fort Wayne. The suit was brought by the

administrator of the estate of a victim of the epidemic. It was the first of its kind in the state.

KANSAS

Personal.—Dr. Milton O. Nyberg, who recently resigned as secretary of the state board of health, has been appointed county health commissioner for Ottawa County, it is reported.

LOUISIANA

Personal.—Dr. Kosta Drensky of Bulgaria, fellow of the International Health Board, recently visited New Orleans and other places in the state to inspect the antimalaria work. Dr. Drensky has been assigned to antimalaria work in Bulgaria.——Dr. Joseph O. Weilbaecher, New Orleans, has been appointed physician to the police department, to succeed Dr. Leonard C. Chamberlain.

Resolutions of Health Officers.—At the recent state conference of health officers in New Orleans, resolutions were passed recommending that health boards try to secure compulsory vaccination of school children and that laws be provided to prevent the spread of rabies by the vaccination of dogs. The shellfish conference, which met the following day, agreed on a closed season for oysters, from May to September, that shucking houses must be provided with cement floors and screens and that all employees should have health certificates.

MARYLAND

Research Building Dedicated.—The new medical research building at the Eudowood Sanatorium, Towson, was dedicated, May 30. The structure cost about $90,000, with an additional $20,000 for equipment. The research department is a new activity at the institution. The building contains laboratories, hydrotherapy department, operating room, space for 150 beds, ten private rooms and sleeping porches. The whole work was done with funds obtained by popular subscription in 1923.

Hebrew Hospital Planned.—The hospital unit planned for the Hebrew Hospital and Asylum, when completed and equipped, will represent an investment of more than $1,000,000. The new building, at the corner of Rutland Avenue and Monument Street, will be an eight story, fireproof structure and will add 105 rooms to the hospital and accommodate forty persons in the home for the aged, making the total number of hospital beds more than 300. The plans include remodeling the Frank Building, the top floor of which will be known as the Nathan and Gertrude Rohr Memorial and will contain twenty-eight beds for children. The total number of beds in this building will be 111.

Children's Fund for Johns Hopkins.—A campaign to raise $1,500,000 for the endowment of the Johns Hopkins Children's Fund will be launched in Baltimore early in October under the auspices of the Johns Hopkins Half-Century Committee, of which Mr. Daniel Willard is chairman. The fund is to provide for the free care of sick and crippled children in the city. The department for children at the Johns Hopkins Hospital spends annually $113,000, of which $80,000 is devoted to the treatment of needy children. About $65,000 of this amount has been coming from the general income of the hospital and a gift of $700,000 from the General Education Board. This gift was intended for a building project and can no longer be used for the children's fund. The hospital is operating at a deficit and can no longer make its contribution. Since the Harriet Lane Home was opened in 1912, the hospital has treated 50,000 children.

MASSACHUSETTS

License Revoked.—The board of registration in medicine, June 4, revoked the registration of A. W. Reibstein, Boston, who is now serving a sentence in the state prison following conviction on a charge of performing a criminal abortion.

Tuberculosis Survey of Boston.—Murray P. Horwood, Ph.D., assistant professor of biology and public health, Massachusetts Institute of Technology, will conduct a tuberculosis survey of Boston this summer for the Boston Tuberculosis Association. This work will be performed with the cooperation of the state and city health departments, hospitals, clinics and voluntary health agencies. The facts ascertained will be used as a basis for a more comprehensive antituberculosis program.

University News.—Prof. William J. Crozier has been appointed associate professor of general physiology at Harvard University, to serve from September 1. In the medical school, three instructors have been appointed assistant professors. They are Drs. Cyrus C. Sturgis, named assistant professor of medicine; Frederick C. Irving, assistant professor of obstetrics, and Calvin B. Faunce, Jr., assistant professor of otology.——Prof. George H. Chase, Ph.D., has been appointed dean of the Graduate School of Arts and Sciences.

Mental Health Conference.—Under the auspices of the Massachusetts Society for Mental Hygiene, a mental health conference was held at Fall River, May 26. Dr. Samuel Tartakoff, U. S. Veterans' Bureau, Boston, spoke on "Mental Health for the Community"; Dr. Ralph M. Chambers, director of the state division for the examination of prisoners, on "Psychopathic Personality: A Community Problem," and Dr. Henry B. Elkind, medical director, Massachusetts Society for Mental Hygiene, on "What Fall River Can do to Help."

MICHIGAN

Deaths from Epidemic Encephalitis.—There have been sixteen deaths in Michigan in the first four months of this year due to epidemic encephalitis, and thirty-seven cases reported. Compared with that of the last two years, this incidence is rather high. Six more cases have been reported since May 1. This disease has been reportable by law in Michigan since 1921.

City Offers Auditorium to County Society.—The mayor and common council of Detroit have approved the appropriation for the first unit of the new buildings for the Detroit College of Medicine and Surgery, and offered the Wayne County Medical Society the use of the auditorium of this new building for its meetings and exhibits. The offer has been accepted by the council of the society.

MINNESOTA

New Health Film.—The Hennepin County Tuberculosis Association showed a new health film, June 18, and offered a prize of $25 for the most suitable title of the play. As part of an educational campaign, after the contest for a title closes, the film will be shown in the parks through the summer.

Institute for Child Welfare.—The gift of $245,000 for the establishment of an institute for child welfare from the Laura Spelman Rockefeller Memorial, Dean Kelly of the university announces, will enable Minnesota to contribute to knowledge of the child of preschool age. The gift will be available at the rate of $49,000 a year for five years. A home will be established to which a small number of infants may be sent, and a nursery school for children up to 5 years of age. The institute will study the development of habits, means of bettering child health, methods of instructing children, and the most normal reactions to environment.

Minnesota Conference for the Disabled.—A new organization known as the "Minnesota Conference for the Disabled" is the outcome of a convention of delegates from all parts of the state, representing educational, social, civic and business interests. The constitution adopted outlines the purposes of the organization as (1) to promote suitable rehabilitation services for the physically handicapped; (2) to further the correlation of activities for disabled persons, and (3) to create an agency to receive and administer special funds for disabled persons. The organization will be administered by a board of fifteen directors and there will be two regular meetings each year, a two day session in April or May and a one day session in the fall.

MISSOURI

Clinical Conference.—The third annual fall clinical conference will be held, October 5-9, at the Kansas City Athletic Club. Clinics have been arranged at all allied hospitals in greater Kansas City.

Suit to Oust Diploma Mills.—It is reported that quo warranto proceedings were filed in the state supreme court, June 16, to oust the St. Louis College of Physicians and Surgeons and the Kansas City College of Medicine and Surgery from the state on the grounds that they sell diplomas.

Hospital News.—Dr. R. Emmet Kane, St. Louis, has been elected president of the St. Louis Association of Hospitals, and Dr. George M. Tuttle, vice president. This is a new organization composed of twenty-six of the standard hospitals in the city, and its purpose is to promote their medical, social and scientific development.

Fund for Library of Ophthalmology and Otolaryngology.—The St. Louis Eye, Ear, Nose and Throat Infirmary has donated to the St. Louis Medical Society almost $3,500 in securities, to be known as the St. Louis Eye, Ear, Nose and Throat Infirmary Fund, the income of which will be used equally to maintain the libraries of the departmeuts of ophthalmology and otolaryngology. The infirmary also gave to the St. Louis Medical Society $350 in Liberty Bonds to aid in the completion of the Medical Library Building.

MONTANA

State Medical Meeting.—At the annual meeting of the Medical Association of Montana, Lewistown, July 8-9, among the speakers will be Dr. John de J. Pemberton, Rochester, Minn.; Dr. Floyd S. Clarke, professor of pediatrics, University of Nebraska College of Medicine, Omaha; Dr. William C. Woodward, executive secretary of the Bureau of Legal Medicine and Legislation, American Medical Association; Dr. Albert R. Mitchell, trustee of the American Medical Association, and Dr. Henry Schmitz, professor of gynecology, Loyola University School of Medicine, Chicago. Dr. William F. Cogswell, Helena, will speak on "Tularemia"; Dr. F. H. Parker, Hamilton, "Recent Results in the Study of the Tick Virus of Rocky Mountain Spotted Fever"; Dr. George W. Swift, Seattle, on "The Use of Air in the Diagnosis of Intracranial Lesions," and Dr. Henry S. Plummer, Rochester, Minn., on "The Diagnosis and Treatment of Exophthalmic Goiter." The annual smoker will be at the Elks Club, Wednesday evening. Appropriate entertainment has been arranged for the ladies.——The Montana Public Health Association will meet, July 6-7, and the Montana Academy of Oto-Ophthalmology, July 7, the guests of honor being Dr. George W. Swift, Seattle, and Dr. Harry W. Woodruff, Chicago.

NEVADA

National Board Certificate Accepted.—At the last meeting of the Nevada State Board of Medical Examiners a resolution was passed providing for granting a license to practice medicine without further examination to candidates who hold the certificate of the National Board of Medical Examiners.

NEW JERSEY

Food Handlers Rejected.—In the examination of 7,589 food handlers in Newark in 1924, there were 796 suspicious cases. These persons returned for reexamination, and of this number twenty were rejected because of tuberculosis, and four because of venereal disease; one was a typhoid carrier.

Child Labor Violations.—Following an inspection begun, May 20, by the state director of employment, persistent violations of New Jersey laws by Philadelphia agencies were reported to Dr. Andrew F. McBride, state labor commissioner, June 6. No child found working possessed an age or schooling certificate, it was reported, and the hours of employment for children were ten hours daily with rest periods unknown. Children under the age of 10 years working on the farms formed 10 per cent. of the total. Accompanying the report was a list of fourteen agents who were said to have violated the law in the last two years.

Iodin Content of Public Water.—The state board of health is making a study of the iodin content of public water supplies in New Jersey. There are no endemic areas of goiter, although cases are seen in most parts of the state. Thus far the examination of deep wells at Asbury Park, Freehold and from the creek at Bridgeton show an entire absence of iodin. Certain deep wells at Princeton showed 8 parts per billion, at Camden 5.3 parts per billion, in the Delaware River at Trenton 1.7 parts per billion, and at Atlantic City 7.4 parts per billion. The chemist states that of the waters examined not any contains a large amount of iodin. Fortunately, sea foods, which contain relatively high percentages of iodin, are readily available in New Jersey.

NEW YORK

Hospital for Middletown.—The trustees of the Elizabeth Horton Memorial Hospital have been authorized by the supreme court to use $311,000 from the estate of Eugene H. Horton to erect a new hospital at Middletown. Mr. Horton left $100,000 for the new building and a $500,000 endowment fund to maintain it. The institution will be named after the founder's mother.

New York University Acquires Dental College.—The New York College of Dentistry will become part of New York University this month, as was announced, June 20, by Chancellor Brown. It will be known as the School of Dentistry of New York University. The dental college was established sixty years ago. Its enrolment for the year just ended was about 600.

Number of Typhoid Carriers.—The total number of typhoid carriers listed in the state, inclusive of New York City and the state hospitals, April 1, was 106, ten of whom had been added since Oct. 1, 1924. Two of the ten carriers were discovered by attending physicians; two by representatives of the state health department; one by the local health officer; one by the attending physician and the health officer; one by the health officer and the representative of the state health department, and one by the attending physician and the representative of the state health department.

Blind Adults May Conduct News Stands.—The governor has signed a bill that amends the general city law concerning licenses to adult blind persons. The amendment provides that the mayor of any city may issue a license to any adult blind person for vending goods or newspapers in such places as he may set aside, and that the license shall be for one year and no charge shall be made. A license, however, shall not be issued to a blind person unless he is a citizen of this country and a resident for three years in the city in which he desires a license. This law applies to any city in the state, whereas the previous law applied only to cities having a population of more than 1,000,000 inhabitants.

Cost of Publications of State Society.—The *New York State Journal of Medicine* cost the state society in 1924 $21,447, an increase of $14,000. The committee on publication says that the increase is not large, in view of the fact that the journal was published weekly during the legislative session, making a volume of twenty-one issues instead of twelve, as in the previous year. The directory published by the state society cost $10,000, an increase of $2,000 over the cost of publication of the directory in 1923, which was due to the increase in membership of the state society and to the addition of 500 more practicing physicians in New York, New Jersey and Connecticut, while the receipts from advertisements and sales were practically the same as in 1923.

Report of Committee on Legislation.—A summary of the work of the committee on legislation of the Medical Society of the State of New York appears in its recent report to the house of delegates. There were introduced in the senate 1,474 bills, all of which were gone over by the committee, and forty-five of which were followed throughout the course of the legislative session. There were 1,721 bills introduced in the assembly, of which seventy-three were kept on the committee's list until the session adjourned. There were eight different varieties of chiropractic bills introduced at this session, an antivaccination bill, which died in committee, a birth control bill and several amendments to the workmen's compensation law. The Carle-Dunmore bill, which provided for stricter regulation of the practice of medicine, and which was endorsed by the committee, failed of passage, the report says, through the opposition of Senators George R. Fearon, Onondaga County, and Leonard W. H. Gibbs of Erie County, both of whom sponsored cult bills. Among many other things, the committee drew up, wrote and filed twelve briefs in opposition to bills presented and eight briefs in favor of bills in which the state society was interested. The committee sent out, in about a year ending April 1, 1925, about 6,000 pieces of first-class mail and received in that time 3,000, in addition to 1,000 pieces of second-class mail and a large number of magazines, all of which were read. Twenty-two different form letters were sent out at various times during the year to county chairmen, secretaries and presidents of county societies.

New York City

Society News.—At the annual banquet of the Bay Ridge Medical Society, June 9, Dr. Henry F. Bruning was elected president; Dr. Frederick E. Elliott, vice president; Dr. Clifton L. Dance, secretary, and Dr. Henry W. Gissel, treasurer.

Child Health Training.—The executive committee of the Laura Spelman Rockefeller Memorial has made an appropriation to Cornell University for the development of instruction and training in child care in the State College of Home Economics for a period of four years, beginning July 1, 1925. The first International Congress on Child Welfare will be held at Geneva, August 24-28 of this year.

Dr. O'Hanlon Goes to Jersey City.—Dr. George O'Hanlon, for fifteen years medical superintendent of Bellevue and Allied Hospitals of this city, has been appointed superinten-

dent of the City Hospital, Jersey City, N. J. Dr. O'Hanlon was formerly president of the American Hospital Association, and for ten years was chairman of the hospital construction committee of the New York Hospital Conference and for many years chairman of the conference. He has been decorated by the king of Italy for work among the Italians of this country.

Physicians Honored.—A testimonial dinner was given to Judah L. Magnes, dean of the Hebrew University in Palestine, at the Waldorf Hotel, May 23, by the American Jewish Physicians' Committee of which Dr. Nathan O. Ratnoff is president. Dr. Israel Strauss of Mount Sinai Hospital presided.——The eighty-sixth anniversary dinner of the Alumni Association of New York University and the Bellevue Hospital Medical College was held, May 23, at the Biltmore. The guest of honor was Dr. George David Stewart, aged 89, a former president of the Academy of Medicine. Dr. Nathan B. Van Etten presided.

Personal.—Dr. William B. Brinsmade has been appointed a chevalier of the Legion of Honor.——Dr. Alphonse R. Dochez received the degree of doctor of science from New York University at the recent commencement for his work on scarlet fever.——The honorary degree of doctor of science was conferred on Donald D. Van Slyke, Ph.D., and Winthrop J. V. Osterhout, Ph.D., both of the Rockefeller Institute for Medical Research, at the recent commencements at Yale University and Harvard University, respectively.——Dr. Charles Ogilvy has been appointed professor of orthopedic surgery in the New York Post-Graduate School and Hospital.

NORTH CAROLINA

Drs. McNairy and Newbold Resign.—Dr. Charles B. McNairy, superintendent, and Dr. William A. Newbold, psychiatrist, at the North Carolina State Training School for Feeble-Minded, Kinston, resigned last week, and Dr. William H. Dixon, Ayden, for several years an active member of the board of trustees of the school, was unanimously elected superintendent. It is reported probable that the position of psychiatrist will also be filled by Dr. Dixon. Dr. McNairy will resume practice at Lenoir, from which place he came to the state school more than twelve years ago.

Hospital News.—Dr. Harris H. Bass, Henderson, has closed his private hospital and will remove to Philadelphia.——The Jane Wilkes Memorial Annex to the Good Samaritan Hospital (colored) in Charlotte was opened, June 22.——Dr. Albert DeK. Parrott, Kinston, has purchased nine tenths of the stock of the Parrott Memorial Hospital of that city. Dr. James M. Parrott, surgeon, will continue as attending surgeon; other specialists will be added to the staff.——The corner stone of the new Memorial Hospital, Kinston, "dedicated as a memorial to the soldiers and sailors of the World War from Lenoir County," was laid, June 12, with appropriate ceremonies.——A communication from Director Hines advises that improvements at U. S. Veterans' Bureau Hospital No. 60, Oteen, will begin at once. A permanent mess hall, kitchen and diet kitchens will be built this year, and in 1926 a diagnostic building and additional quarters. Most of the construction at this hospital built during the World War was temporary; beginning in 1920, the government has constructed all new work along permanent lines.

PENNSYLVANIA

Governor Signs Charity Bill.—Governor Pinchot has signed the "Steel Bill," which provides $500,000 for the new construction for Laurelton State Village for Feebleminded Women.

Annual Clinic of County Society.—The Westmoreland County Medical Society held its annual clinic, June 17, in Latrobe under the auspices of the Latrobe Academy of Medicine. Dr. Nelson G. Russell, professor of clinical medicine, and Dr. James E. King, professor of gynecology, University of Buffalo School of Medicine, Buffalo, conducted the afternoon session. Dr. Lawrence Litchfield, Pittsburgh, spoke on "Liver Function Tests and Visualizing the Gallbladder Contents." At the dinner, among others, John G. Bowman, LL.D., chancellor, University of Pittsburgh, spoke on "What the Cathedral of Learning Means to the Medical Profession."

Convention at Mont Alto.—The first general meeting of the Pennsylvania Public Health Association since its formation this year, opened, June 22, with more than 300 physicians and health officials present, in the auditorium of the Mont Alto Tuberculosis Sanatorium. Dr. Charles H. Miner, secretary, Pennsylvania Department of Health, Dr. John L. Laird, of the state department of health laboratories, Dr. B. C. Frontz, Dr. Victor G. Heiser of the Rockefeller Foundation, Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service, and Dr. Samuel J. Crumbine of the American Child Health Association, were among the speakers. The following officers were elected: Dr. Charles H. Miner, president; Dr. Wilmer Krusen, director of public health, Philadelphia, and Dr. Carey J. Vaux, health director of Pittsburgh, vice presidents, and Dr. William C. Miller, secretary and treasurer.

Philadelphia

Society News.—Dr. Emery R. Hayhurst, professor of hygiene, Ohio State University, Columbus, recently addressed the section on public health and industrial medicine, College of Physicians of Philadelphia, on "The Value of Health in Industry."

Personal.—Dr. Lyn Waller Deichler, Philadelphia, has been appointed visiting ophthalmologist to the Philadelphia General Hospital, to succeed Dr. John W. Croskey, who resigned after twenty-five years' service.——Dr. Ross H. Skillern received the honorary degree of doctor of science from Ursinus College at the commencement, June 8.——Drs. Mary B. Buchanan, George E. de Schweinitz, S. Lewis Ziegler, William Campbell Posey and Heilner Maxwell Langdon will attend the Congress of English-Speaking Ophthalmologists in London, the week of July 13.

Hospital News.—The new building of the Samaritan Hospital at Broad and Ontario streets, erected at a cost of $506,000, was opened for inspection, June 18. Its capacity is 305 beds.——The corner stone of the new Shriners' Hospital for Crippled Children on Roosevelt Boulevard was laid, June 24.——Dedication exercises were held, June 25, at the "sun-cure sanitarium" of the Philadelphia Health Council and Tuberculosis Committee, Chestnut Hill. A demonstration by twenty-five children of heliotherapy was part of the exercises of the Christmas seal service in the Lucas Cottage, recently renovated at a cost of $15,000. The speakers included Drs. Wilmer Krusen and Charles J. Hatfield.

SOUTH DAKOTA

Health Education Publicity.—The state board of health during March provided addresses, or exhibited films on health subjects, before nineteen community groups having a total attendance of 2,615. This involved travel of a thousand miles by railway, bus, state car and local livery. All of the appointments were kept as arranged but one, when a lecturer within a mile of his destination became snowbound.

VIRGINIA

Several Poropathists Want to Be Licensed.—Dr. John Shelton Horsley, Richmond, notes in the *Virginia Medical Monthly* that the legislature in 1918 provided a way through which Arthur de Collard was enabled to practice "poropathy" without examination or inquiry into his scientific attainments by the state board of medical examiners. Arthur claimed to be a cousin of Napoleon and a graduate of several European universities. His diplomas, he said, had all been burned, and he would not answer the simplest question on the elements of medicine and surgery. The bill defined poropathy and manipulative surgery as a new branch of therapeutics. It employs no medicine taken through the stomach and does not employ the knife. Healing and curative agencies and lotions, however, applied directly to the diseased organs and to the nerves controlling those organs, through the pores of the skin and mucous membrane, which are opened by medical manipulation, immediately reach the disease or ailment through the eliminating organs, and by this process heal and cure most of the ills to which flesh is heir, including: internal cancer, cerebrospinal meningitis, epilepsy, tuberculosis of the joints and heart disease. This system, according to the bill, would adjust, heal and cure broken bones, sprains and dislocations. After a committee substitute for the bill and various amendments to the substitute had been rejected, the bill was passed and Arthur de Collard through it acquired the right to practice poropathy in Virginia. Dr. Horsley says there are now several poropathists in the state who have taken a course under de Collard and who desire to be licensed to practice.

WASHINGTON

Dr. Turner Resigns.—Dr. Paul A. Turner, state director of health, has resigned and accepted a position with the department of health and sanitation, Seattle, as medical inspector.

County Commissioners Bar Drugless Practitioners.—Having rescinded their previous action, the commissioners of Pierce County have decided that only doctors of medicine may practice in the county hospital.

Library Presented to Medical Society.—The board of trustees has accepted the gift of the medical library of the late Dr. David A. Mitchell, presented by Mrs. Mitchell. The books will be given to the Washington Medical Library Association for the use of its members.

Personal.—Dr. Hiram M. Read, Seattle, has been appointed to the Veterans' Bureau Medical Service and assigned to the Portland office.——Dr. Frank W. Nagler, Yakima, has been appointed city and county health officer to succeed Dr. Howard H. Smith, who has resigned on account of poor health.

Hospital News.—The Swedish Hospital, Seattle, will construct a 300 bed building adjacent to the present hospital. A unit containing 100 beds and costing $250,000 will be constructed first, and the hospital association has the funds in hand for this unit. The remainder will be constructed when necessary.

WEST VIRGINIA

Injunction and Abatement Law.—A law becomes effective, July 15, which provides for the closing as a nuisance of any place for purposes of prostitution. The prosecuting attorney of the county, or the attorney general of the state, may bring suit in equity and should they fail to enforce the law, a resident may bring a suit in equity in the name of the state to close up the place. The law permits the abatement of such a nuisance and perpetually enjoins any person from further maintenance thereof. There are still ten states, according to the U. S. Public Health Service, without laws for this purpose. Texas has a law without the abatement feature; the New Jersey law was declared unconstitutional in 1919, and the Maryland law became ineffective two years after the World War.

CANADA

Society News.—The Canadian Medical Association has adopted an official motor emblem which is now being sold to members for $2.50. The emblems are serially numbered, and a record is kept of them by the association.

Personal.—Dr. Richard G. Large, Hazelton, B. C., has been appointed health officer and school inspector for that district.——Dr. Hibbert Winslow Hill, London, Ont., has been appointed professor of bacteriology and professor of nursing and public health at the University of British Columbia, to succeed the late Dr. R. Mullin.——Dr. Hill H. Cheney, for eleven years assistant in the roentgen-ray department of the Royal Infirmary Hospital, Montreal, has been appointed in charge of the roentgen-ray and physiotherapy department of the Civic Hospital at Ottawa, one of the largest hospitals in Canada.——Dr. Avilla Chabott, formerly of Verdun, has been appointed inspector of health and sanitation for the district of Montreal.——Dr. Victor G. Heiser of the International Health Board, New York, was recently tendered a reception at the Dalhousie Health Center, to meet members of the Dalhousie faculty and students of the graduating class.—— Dr. Charles F. Martin, dean of the faculty of medicine, McGill University, Montreal, gave an address, May 28, at the opening of the memorial gates erected by Lady Roddick at the entrance to McGill University in memory of her husband, a former dean of the medical faculty.——Dr. Roy B. Jenkins, Alix, Alta., has been appointed provincial medical health officer with headquarters at Edmonton.

GENERAL

American Heart Association.—The offices of this association were moved recently to the office of the New York Tuberculosis Association at 244 Madison Avenue, New York City. The executive office will continue to be at 370 Seventh Avenue.

Monument to Dr. Darling.—It is reported that the Lebanon government has decided to erect a monument to Dr. Samuel Taylor Darling of the Rockefeller Foundation and Dr. Norman Lothian of London, both of whom were killed in an automobile accident in May.

National Research Fellowships.—A meeting of the Board of National Research Fellowships in the Biological Sciences will probably be held the first week in September. Applications to be presented at this meeting should be filed by August 1. Application forms may be obtained from the secretary, Board of National Research Fellowships in the Biological Sciences, National Research Council, Washington, D. C.

Rockefeller Foundation Trains Six Bulgarian Physicians.—A representative of the Rockefeller Foundation in Europe, Dr. Slaskar Michael Gunn, before his departure from Sofia after his visit of inspection of sanitation in Bulgaria, arranged for the sending of six local physicians for a year's course of study in American hospitals. These physicians are to be selected by competitive examination, and will leave next September.

Trend of Whooping Cough Mortality.—In twenty-three American cities, the death rate from whooping cough between 1885 and 1923 declined at the rate of 4 per cent. of the mean rate, yearly, according to the *Statistical Bulletin* of the Metropolitan Life Insurance Company. It followed a fairly consistent course from 1885 to 1915, but departed on the high side of its previous norm in the following years. From 1915 to 1923, the average death rate was 7.6 per hundred thousand.

Manufacturers of Groceries Endorse Lye Legislation.—Charles W. Dunn, general counsel of the American Grocery Specialty Manufacturers' Association, recently informed the committee on lye legislation of the American Medical Association that the manufacturers of lye unqualifiedly endorsed the legislation proposed by the American Medical Association and pledged the cooperation of the lye section in the enactment of this legislation and in the education of the public against the accidental consumption of lye.

National Committee for the Prevention of Blindness.—The new school term recently opened with 207 sight saving classes, a gain of twenty over the previous year. Two series of summer courses will be given in 1925, one by Peabody College, Nashville, Tenn., and one by the University of Cincinnati. These courses offer lectures, observation in a demonstration class and clinical work. A survey of the eyes and ears of 8,000 school children of Jamestown is being conducted by the health department of the University of the State of New York. Dr. Emily A. Pratt is in charge of the survey.

Tuberculosis Mortality.—There are now fewer than 100,000 deaths from tuberculosis annually in the United States, whereas a few years ago there were 150,000 for a smaller population. A statistical analysis by the New York Tuberculosis and Health Association states, however, that there are still twelve states and the District of Columbia which in 1923 had a tuberculosis death rate or more than 100 per hundred thousand population. Four of these, however—Arizona, New Mexico, Colorado and California—should be excluded from this list on account of the many nonresidents who go there for treatment. There are remarkably low rates in Kansas (40), Utah (36) and Nebraska (33). The analysis shows that in thirty-two states in 1923 there was a decrease in the tuberculosis death rate and in thirteen states and the District of Columbia there was an increase, notably also in Arkansas, Florida and Indiana. There are more than 66,000 beds for tuberculous patients in 714 institutions in the United States. In this total there are seventy-five federal institutions with 11,458 beds, first for ex-service men, and secondly, 584 beds in eleven institutions for Indians.

Dr. Long Goes to Chile.—At the request of the government of Chile, Dr. John D. Long, Assistant Surgeon General, U. S. Public Health Service, will become technical adviser in public health to the Chilean ministry of hygiene. Dr. Long, who has been in charge of the Division of Foreign Quarantine Immigration and International Relations of the U. S. Public Health Service, is familiar with the public health problems of Latin America, having been for more than twenty-five years a quarantine officer in the Public Health Service. He was a member of the U. S. delegation to the Fifth International Conference of American States at Santiago in 1923, and has made several visits to Chile and other countries of Latin America in his capacity as vice director, Pan-American Sanitary Bureau. As a result of the Fifth International Conference and the advocacy of public health measures there by

George E. Vincent, president, Rockefeller Foundation, the government of Chile has been greatly interested in improving sanitary conditions and in reducing the death rate. One of the first steps taken was the creation of a ministry of hygiene. Through diplomatic channels, the government requested the services of Dr. Long, and his assignment was arranged by Surgeon General Cumming. Dr. Long sailed, June 18.

Dr. Rappleye Heads Commission on Medical Education.—It was announced, June 21, that Dr. Willard C. Rappleye, professor of hospital administration, Yale University School of Medicine, and director of the New Haven Hospital, New Haven, Conn., has resigned to become director of a commission on medical education which, under the auspices of the Association of American Medical Colleges, will survey the field of medical education in the United States. The survey will cover a study of premedical education, medical education and the relation of medical education to medical licensure, public health and medical practice. To complete the survey, it is expected, will require about four or five years. The other members of the commission will be:

Abbott Lawrence Lowell, Ph.D., president of Harvard University.

Dr. Ray L. Wilbur, president of Stanford University and president of the Association of American Universities and a member of the Council on Medical Education and Hospitals of the American Medical Association.

Dr. Walter A. Jessup, president of the State University of Iowa and a member of the National Association of State Universities.

Chancellor Samuel P. Capen, LL.D., of the University of Buffalo and president of the American Council on Education.

Sir Robert A. Falconer, president of the University of Toronto, representing Canadian educational institutions.

Dr. Olin West, Secretary of the American Medical Association, representing the organized medical profession.

Dr. Walter L. Bierring, Des Moines, Iowa, representing the National Board of Medical Examiners.

Dr. George Blumer, New Haven, Conn., representing the Association of American Physicians.

Dr. Hugh Cabot, dean of the University of Michigan Medical School and president of the Association of American Medical Colleges.

Dr. William Darrach, dean of Columbia University College of Physicians and Surgeons, representing the Carnegie Corporation, New York.

Dr. David L. Edsall, dean of Harvard Medical School, representing the Association of University Professors.

Dr. Henry Gordan Gale, Chicago, dean of the Ogden Graduate School, representing graduate education.

Dr. Thomas S. McDavitt, St. Paul, president of the Federation of State Medical Boards.

Prof. Lafayette B. Mendel, Sc.D., Yale University, of the American Association for the Advancement of Science.

Dr. William A. Pusey, Chicago, of the American Medical Association.

Dr. Hans Zinsser, Boston, of the American Public Health Association.

LATIN AMERICA

Hospital for Women.—The Arzobispo Loayza Hospital for Women at Lima, Peru, was recently opened. It was built by the Sociedad de Beneficiencia Publique of Lima at a cost of $794,000. It is fireproof and earthquake proof. There is an administration building, two medical and two surgical pavilions, and wards to accommodate sixty patients; also a nurses' home and training school to accommodate 150 nurses.

Personal.—Dr. Albert Chueco has returned to his surgical service at Buenos Aires and editorial work on the *Semana Médica* after a year abroad.——Prof. P. Duval, of the chair of surgery, Paris, leaves in August to deliver a series of interchange lectures on surgical topics at Buenos Aires.——Dr. J. C. Navarro, president, and the other officials of the Argentine Medical Association have issued an appeal for a grand get-together banquet of the more than a thousand members of the association.——Dr. José Ingenieros is the official delegate from Argentina to the Charcot centennial celebration.

Control of Venereal Diseases.—The Republic of Chile recently established a division of social hygiene for the control of venereal disease with three departments—education, control and healing. The first is responsible for the creation of social hygiene professorships in the medical schools and for suggestions in social hygiene instruction to be included in public education, for the control of prostitution and the supervision of specialists in venereal diseases. The department of control "watches over" the morals of public resorts and the practice of surgery as relating to social disease. The department of healing distributes medicines to hospitals and clinics, maintains a manufacturing laboratory, and makes available information on medical progress in the diagnosis and treatment of venereal and other diseases. There is a social hygiene brigade for each of the five zones in which the republic is divided. They have clinics and hospitals for venereal patients and others, and brigade reformatories to render hospital service to those who have refused treatment in compliance with the law.

FOREIGN

Madame Curie Honored.—Madam Curie arrived in Warsaw, her native city, June 3, to lay the cornerstone of the radium institute and hospital to be erected as a monument to her.

Red Cross Funds for Japanese Hospital.—Doai Hospital, to be built in Honjo, Tokyo, with the 6,000,000 yen contributed in 1923 by the American Red Cross to relieve victims of the earthquake, the construction of which will start shortly, will be a four story structure of reinforced concrete and have a capacity to treat about 600 patients a day. The hospital will be principally for free patients and will be in charge of Dr. K. Miura.

Annual Award of Medal.—The directors of the *Medical Journal of South Africa* awarded the Hamilton Gold Medal for the best paper published in that journal in the last calendar year to Dr. R. A. Ross, for his paper on "Surgical Infections of the Hand." The Maynard prizes, also awarded by the directors of this journal for the best essay on selected subjects, have not been awarded this year. The board considered that no work of outstanding merit had been submitted.

Spain Admits Only Class A Graduates.—The regulations of the board of examiners of Spain require of foreign physicians who desire to practice medicine in that country that their education be equal to that provided in Spanish universities. From the United States, only graduates of Class A medical schools are admitted; from four to six months is required to determine whether the candidate may take the examination, and from three to twelve months to complete the examination. The fee is from $289 to $386.

Art Depicting the Wounded.—Less than half a dozen physicians contributed to the "Salon of the Wounded," recently opened at Paris, but large numbers of paintings, etchings and sculpture by lay artists, depicting the wounded, were collected. They form an exhibition which, a writer in the *Paris médical* says, should be kept open permanently during times of peace, the reverse of the temple of Janus. The exhibition is at Val-de-Grâce, the military medical school, and was ready for the recent International Congress on Military Medicine, at Paris.

First Lister Memorial Lecture.—Sir William Hunter Watson Cheyne delivered the first Lister Memorial Lecture at the Royal College of Surgeons, May 14. Sir William was an assistant to Lister in London. The Lister memorials, for which funds were raised some years ago, comprise a monument, unveiled in London in 1924, a medallion placed in Westminster Abbey, and the International Lister Memorial Fund for the Advancement of Surgery, of which the Royal College of Surgeons of England is trustee. A bronze medal is awarded every three years with a sum of £500 in recognition of noteworthy contributions to surgery. Sir William Hunter Watson Cheyne is the first recipient of the medal.

New Address of British Medical Journal.—The *British Medical Journal* has moved into the new headquarters of the British Medical Association in Bloomsbury. The postal address henceforth will be *British Medical Journal*, British Medical Association House, Tavistock Square, W. C. 1, London, and the telegraphic address, "Aitiology Westcent, London." The ornamental wrought iron gates, designed by Sir Edwin Lutyens, will complete the main quadrangle at the new headquarters and also be a memorial to members of the association who lost their lives in the World War. The dedicatory tablet over the central gate bears the inscriptions: "Memory and Praise" and "Faithful has been your warfare." The *British Medical Journal* notes that the traditional craft of wrought iron work practiced in England in the eighteenth century is almost a lost craft. It is expected that the ceremonies of opening the new headquarters, including the dedication of the memorial gates, will be in the week beginning July 13.

Safeguarding Induced Abortion.—The *Münchener medizinische Wochenschrift* gives the details of the resolution adopted by the Darmstadt Aerztlicher Kreisverein in regard to induced abortions. It states that the indications for the abortion must be accepted by three independent physicians, none of whom is related to the others or to the pregnant woman. Before the intervention, the reasons for the decision must be written out and signed by the three physicians, and the written consent must be appended of both husband and wife or, if unmarried, of the pregnant woman alone; if a minor, of her legal guardian. These documents are to be placed in an envelop, sealed, and signed with the names of the

three physicians, the name of the attending physician being underscored, and the name of the place, the date and the nature of the invention are to be given. This envelop must be delivered to the president of the Kreisverein by the attending physician within three days. The society is to deposit the envelop in its archives and keep it for ten years, and then destroy it unopened. If a physician has inadvertently interrupted a pregnancy, he must make a written report of the occurrence to the president of the Kreisverein, giving the patient's name in a sealed envelop. Any infringement of these regulations entails an appeal to the professional tribunal of honor.

CORRECTIONS

El Paso Instead of Houston.—Dr. Herbert F. Sterzing is general superintendent of the City-County Hospital System at El Paso instead of Houston (THE JOURNAL, June 20, p. 1928).

Appointment of Dr. Drake.—The appointment of Dr. C. St. Clair Drake, Chicago (THE JOURNAL, June 13, p. 1845), should have read acting field director of the Committee on Municipal Health Department Practice of the American Public Health Association.

Government Services

Navy Hospital Enlarged

The U. S. Naval Hospital, Mare Island, has under construction a general ward building, a contagious ward building and a building for officer patients. When completed, the hospital will accommodate 350 patients.

Qualified Flight Surgeons and Examiners

The School of Aviation Medicine of the Army, Mitchel Field, N. Y., had a special session for Reserve and National Guard officers from May 1 to June 15. The following officers took the advanced course and have been qualified as flight surgeons:

Lieut. Col. Serge Androp, Med. Res., Gallipolis, Ohio.
Major Harry N. Anderson, M. R. C., Woodbine, Iowa.
Major Grambow Thomsen-von Colditz, M. R. C., Evanston, Ill.
First Lieut. Albert J. Herbolsheimer, M. R. C., Minneapolis.
Capt. Elmer E. Langley, Washington N. G., Spokane, Wash.

The following officers took the preliminary course and have been qualified to perform the physical examination for flying:

Major William D. Petit, M. R. C., Thorndale, Texas.
Major Irwin E. Ruhl, M. R. C., Kansas City, Mo.
Major Lewis W. Fetzer, M. R. C., Dallas, Texas.
Major Alexander W. Burke, M. R. C., Chicago.
Major Archie McCallister, M. R. C., Oteen, N. C.
Major Victor W. Maxwell, M. R. C., Sanatorium, Miss.
Capt. Albert J. Pullen, M. R. C., Fond du Lac, Wis.
Capt. Louis G. Pawelek, M. C., Texas N. G., Houston, Texas.
Capt. Wilbur F. Smith, M. C., Indiana N. G., Indianapolis.

Sixty Vacancies in Army Medical Corps

An examination for appointment of first lieutenants in the Medical Corps of the Regular Army will be conducted at military stations throughout the United States, Sept. 14-18, 1925. There are sixty vacancies in the Medical Corps of the Army. The entrance annual pay of first lieutenants of the Medical Corps is $3,152 when he has dependents and $2,696 when he has no dependents. Applicants must be male citizens of the United States, between 23 and 32 years of age at the time of commission, graduates of an acceptable medical school, must have completed one year of clinical training in an accredited hospital since graduation, and must be physically fit for military service. Candidates otherwise eligible who have not completed the fifth or clinical year requirement may take this examination and if found qualified will be given appointments on completion of their clinical training. Successful candidates, after appointment, will pursue a course of instruction for about one year at the Army Medical School, Washington, D. C., and the Medical Field Service School, Carlisle Barracks, Pa. Applications for permission to appear before boards for examination can be obtained from the Adjutant General of the Army, Washington, D. C., or from the nearest military post or station.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 6, 1925.

The Inter-State Post-Graduate Assembly of America

The third visit of a large body of American physicians to this country has been made this week. In an interview, Dr. William B. Peck of Freeport, Ill., managing director of the assembly, expressed his appreciation of generosity and hospitality received.

INAUGURAL MEETING

The Duke of York presided at the inaugural meeting, which took place at Wigmore Hall, June 2; more than 500 members of the assembly and many leaders of the British profession were present. The duke extended a cordial welcome to our guests.

Mr. Neville Chamberlain, minister of health, welcomed the guests on behalf of the government. It was gratifying to this small island to be able to open its arms at once to representatives of every state in the American Union and every city in Canada. The benefits of the visit would not be all on one side, for our physicians would learn from contact with their guests.

Sir Humphry Rolleston, president of the Royal College of Physicians, extended the warmest welcome to our overseas colleagues. Such meetings increased sympathy as well as promoted knowledge. Physicians were students all their days and were most anxious to learn how they could best keep up with the ever advancing tide of knowledge. Postgraduate education was a very urgent problem in London, and much could be learned from the American visitors. How that "beloved physician," Sir William Osler, would have welcomed such a meeting.

Sir John Bland-Sutton, president of the Royal College of Surgeons, said that it was one thing to read about a surgeon in his effusions in medical journals and other legitimate forms of advertisement, but it was different to meet him face to face in his own wards or operating theater. This was the greatest invasion of American physicians that these islands had ever witnessed.

The American ambassador, Mr. A. B. Houghton, said that the comradeship of the British and American professions, so manifest in the agony of war, was now happily to be perpetuated by the comradeship of peace. Addressing a "gentle admonition" to his countrymen, he said that it would require all the talent and knowledge of their profession to weather the burst of British hospitality which awaited them. Nowhere else would they find a hospitality so generous, so gracious, so altogether delightful.

Dr. Charles H. Mayo, president of the clinics, expressed the great pleasure that it gave the members of the assembly to have a royal welcome seconded by many able representatives of England. Such a welcome would be recorded in all the states and provinces of North America; it would add to the warmth of feeling for the mother country, and would bring together more closely the English-speaking peoples. In concluding, he admitted the Duke of York an honorary member of the assembly.

The medical program in London occupied three days. In the mornings, short lectures were given at Wigmore Hall by the leading London physicians and surgeons, and in the afternoons the American physicians divided themselves into parties of twenty or thirty to visit thirty-four London hospitals, where lectures, clinics and operations had been arranged for their benefit and tea was served. The arrangements were excellent. The difficulty arising from the fact

that the hospitals are scattered over the vast metropolis was dealt with by providing a fleet of motor busses, which started every day at 1:30 from Cavendish Square, each bus placarded with the hospitals to which it plied.

GALLBLADDER DISEASE

The first of the morning lectures was delivered on gallbladder disease by Sir Humphry Rolleston. The two etiologic factors—the infective and the metabolic—in the formation of gallstones sometimes operate alone but more often together. As a prophylactic against gallstones, he advocated restriction of foods rich in cholesterol, such as yolk of eggs, brain, fats, butter, fried foods, goose, duck, sweetbread, liver, kidneys, beans and peas. Stagnation of bile in the gallbladder should be counteracted by frequent small meals, which caused corresponding evacuations of the gallbladder, and by exercise, especially such as entailed free excursions of the diaphragm. But medical treatment was not so radical, and not so satisfactory, as surgical removal of the calculi.

"NEW DISEASES FOR OLD"

Sir Thomas Horder pointed out that while certain old diseases tended to disappear or lose their virulence, new ones were taking their place. The fall in the incidence of diphtheria, typhoid, erysipelas, hydrophobia, anthrax and glanders —to name only a few—was doubtless a testimonial to public health work. Changes for the better in the habits of our people had probably brought about the decline of rickets, some forms of tuberculosis and chlorosis. Acute gout was much less frequent, though whether this was due to drinking less alcohol or to drinking different alcoholic beverages from our fathers was not clear. On the other hand, a series of disease processes had arrived, having in common a large element of functional disturbance—neurasthenia in all its forms; arterial hypertension, with arteriosclerosis in close attendance; functional heart affections, with myocardial defects as accompaniments or sequels; hyperthyroidism, and perhaps diabetes. There had been an increase in affections due to the less pathogenic members of the coliform and streptococcal groups of bacteria. In the coliform group we had watched the appearance of paratyphoid infections and a large increase of infections due to colon bacilli or lactose-fermenting members of the coliform group. Many of these infections were subacute or chronic. Infections of the urinary tract and of the gallbladder had become common. Similarly, there had been a large increase of affections due to the streptococcus group. The increase of bacterial endocarditis, nearly always subacute and associated with feebly pathogenic strains, was a notable example. Then there was the large group, conveniently termed "focal sepsis," chronic infections for the most part of the peridental membrane, tonsils, accessory nasal sinuses, and respiratory and digestive tracts. Most of these were due to the same saprophytic strains of streptococci. There was good reason to regard infection with these saprophytic strains as due to lowered tissue resistance. The influence of the nervous system on the response to bacterial infection had been too little regarded. We must concentrate more on raising the general resistance and especially the nerve tone, instead of directing our efforts so much to the bacteriologic problem. The response to specific inoculation in many subinfections was disappointing. Nor did chemotherapy offer any better hope. We should aim at raising the general resistance by nonspecific means—open air by day and night, sunlight, ample and good food, and general tonic measures. We ought to induce our patients to lead a simpler life.

INTESTINAL STASIS

Sir W. Arbuthnot Lane said that the universal overloading of the large bowel involved an attempt to control dilatation and elongation of the intestine, which resulted in the formation of bands. These contracted, gripped the bowel, rotated it on its long axis, and fastened it to the floor of the iliac fossa, interfering with the passage of material. This was followed by contamination of the dammed back nutrient material and innumerable morbid sequelae. In milder cases, lubrication of the canal by the free use of paraffin was sufficient. Suitable diet, kaolin and belladonna were useful adjuvants. In other cases the freeing of the anchored bowel by a simple operation restored mobility.

ADDISON'S ANEMIA AND COMBINED DEGENERATION OF THE CORD

Dr. A. F. Hurst said that 85 per cent. of the cases of pernicious anemia showed symptoms of combined degeneration of the cord. The two diseases were due to the same cause—an infection that began in the mouth. Both conditions were marked by absence of hydrochloric acid in the gastric juice. This achlorhydria was familial, which explained the familial occurrence of Addison's anemia. Treatment consisted in eradicating oral infection after preliminary vaccination to prevent absorption of a large dose of toxin. Then hydrochloric acid should be given in large doses.

THE COMBATING OF VENEREAL DISEASE IN ENGLAND

Col. L. W. Harrison said that it had been assumed that attendance at the *ad hoc* treatment centers would be less than at the hospitals, owing to the camouflage which the latter provided. This had not proved true, and it was evident that the people would go where they could get the most efficient treatment. During the last four years the treatment had reduced the new cases of syphilis from 42,000 in 1920 to 22,000 in 1924. But he would not join with the optimists in other countries, who predicted that in ten years syphilis would be extinct. He believed, however, that they would see results which would justify the expense of the venereal disease scheme. New infections of gonorrhea had also diminished from 40,284 cases in 1920 to 31,272 last year. Improvements were necessary to discover venereal diseases in women and to secure their treatment. Thanks to propaganda, the public was daily becoming more aware of the evil effects of venereal disease and of the importance of thorough treatment. The quality of the work in the treatment centers improved year by year, so that the percentage of cases rendered noninfective increased.

INFLUENZA AND THE HEART

Dr. Strickland Goodall referred to an analysis of a large number of cases of heart disease which he had seen in the last twenty years and which had convinced him that the causation of heart disease in this country was changing. Until a few years ago the only antecedent disease to which we paid any attention in this country was rheumatism, but he had been struck recently by the fact that in a large number of serious heart cases the only definite antecedent complaint was influenza. After a mild attack, the patient appeared to recover completely and then suffered from heart trouble. The influenza virus might attack any part of the heart, and might cause flutter, fibrillation or heart block.

THE SPEED OF LIFE AND DISEASE

Lord Dawson of Penn suggested that the medical profession would become an educational body, recognizing that psychologic culture was of equal importance with physical culture. With the growth of medical science, the diseases that attacked us from without were growing fewer, but their places were being taken by lesser infections. The microbes of the acute infections invaded in force but left us alone after recovery, whereas the microbes of the subacute infections shared our active lives, troubling us but little when we were

fit and damaging us when we were unfit. For these subinfections public hygiene was of small avail: it was the condition of the host that mattered, and that condition was determined partly by the individual and partly by the exactions made on his life. A measure of struggle would make for health, but the difficulty of modern life lay in the overdose of struggling, which produced not strength but stress. Lord Dawson believed that society was adapting itself to the new conditions.

THE STATE AND MEDICAL RESEARCH IN GREAT BRITAIN

Sir Walter Fletcher said that the country had never lacked men of first-rate ability in research work, but their efforts had been crippled by lack of money. It was still insufficiently recognized that the great achievements of our scientists had been already dependent on ancient endowments or their own private means. In the recently founded Medical Research Council, the problem of government control had been solved by the establishment of a small body composed chiefly of independently appointed scientific men who spent the money as they thought fit. The government allowance had grown from $200,000 to $700,000, still a trifling sum, but supplemented by voluntary help, it had greatly increased the volume of research work. In the last twelve years, considerable progress had been made in linking the scientific work of Great Britain with that of America. This progress had been facilitated by the Rockefeller Foundation.

FUNCTIONAL NERVOUS DISTURBANCES IN CHILDREN

Dr. H. C. Cameron said that a common effect of excessive mothering was the development in the child of "negativism." He recommended that children who persistently refused food should not be pressed to eat but should be made to feel that every item in the meal was a concession yielded with reluctance by their parents. They would then quickly develop enormous appetites. Similarly, children addicted to thumb sucking or head banging should be peremptorily ordered to suck thumbs and to bang their heads.

THE DRUG ILLUSION

At luncheon given by the English-speaking Union to the assembly, Dr. Woods Hutchison spoke of ridding America of the drug illusion. The people were willing to subscribe to the dictum of Oliver Wendell Holmes that if 99 per cent. of all the drugs were thrown into the sea it would be a good thing for the human race but rather hard on the fishes. The physicians took their remedies now from good food, fresh air and bright sunshine. Health was being made contagious instead of disease. The most important factor in a common sense diet was plenty of meat. There was no evidence to support the old tradition that meat was bad for gout or the kidneys, or that it tended to harden the arteries. People who lived on meat, such as those of Canada, New Zealand and Australia, had the longest lives. Another excellent principle was for the physician to find out what the patient liked in the way of food and let him have it. People who lived on a diet mainly composed of cereals had just about the same resisting power to disease as cows and rabbits.

THE BANQUET

The concluding and most important social function was a banquet at the Guildhall given by the advisory committee of the assembly to 700 British guests. Dr. Charles H. Mayo presided. A telegram was read from the king thanking the assembly for its greetings and trusting that its stay in this country would be interesting and agreeable. The minister of health, Mr. Neville Chamberlain, proposed the health of the Inter-State Post-Graduate Assembly. Dr. C. H. Mayo, in reply, said that, whereas in 1850 the average age of man was 40 years, in 1875 it was 45, and now it had increased to 58. They were there to learn how to save a few of those twelve years that were still lacking to make the "three score years and ten." One of the most important things they were going to take back after their visit was the fact that England had a minister of health. While, with the enormous additions to the world's knowledge in scientific medicine, they needed specialists, they also had need for general practitioners, and if these did their full duty medicine would always stand high. As a result of their visit they would obtain advantages not only for themselves but also for the people of their country. They could not adequately express their thanks for the kindness shown to them.

For the great success of this memorable visit, thanks are due to the American and British organizers and to the unstinted cooperation of the whole of the medical teachers of London. But special acknowledgment is due to Dr. Wiliam B. Peck of Illinois, the managing director; Mr. Philip Franklin of London, the honorary organizer, and to Mr. W. Girling Ball of London, one of the honorary secretaries. The assembly has left London for Manchester, Leeds, Liverpool, Dublin, Glasgow, Edinburgh, Newcastle-on-Tyne, Belfast and Paris.

PARIS

(From Our Regular Correspondent)

June 9, 1925.

Centennial Celebration in Honor of Charcot

Last week Paris celebrated the hundredth anniversary of the birth of Jean Martin Charcot. Many nations were represented at the celebration. On the first day, two sessions, held at the Salpêtrière, were devoted to papers on amyotrophic lateral sclerosis The second day, the Société de neurologie held a special meeting in remembrance of its twenty-fifth anniversary, and Professor Guillain, the occupant of Charcot's professorial chair, delivered an excellent address. In the afternoon, ceremonies were held at the Academie de médecine, and the élite of the medical profession of France gathered to hear Prof. Pierre Marie's eulogy of Charcot. In the evening, the president of France presided at a meeting at the University of Paris. Before an audience of 3,000, Dr. Babinski spoke of the activities of his former teacher Charcot. Shorter addresses were given also by Professor Guillain, Professor Marinesco of Bucharest, Professor Roussy in behalf of the Société anatomique, Dr. Rist in behalf of the Société médicale des hôpitaux, Professor Calmette in behalf of the Pasteur Institute, Professor Lallemand in behalf of the Institut de France, of which Charcot was a member; Mr. Sinclair Tomson, president of the Royal Medical Society of London, and Mr. de Monzie, minister of public instruction. Babinski declared that Charcot was one of the greatest medical figures of the nineteenth century, since he combined the qualities of keen observation, patience and the capacity for hard work, without which genius has rarely an opportunity of manifesting itself. Being passionately interested in pathologic anatomy as well as clinical pathology, he succeeded, by means of intensive study in these two fields, in giving a description of disease-producing bacteria hitherto unknown, and the volume of creative work to his credit is immense.

Charcot's name is intimately associated with the Salpêtrière, where he served as intern in 1852, was appointed on the hospital staff in 1862; and remained until his death. This asylum, the largest in the world, offered him a marvelous field of study, and it was there that he performed the work that brought him so great renown. His doctoral thesis, published in 1853, on chronic rheumatism was epoch-making, for he showed that the presence of an excess of uric acid in the blood separates frankly gout from the various forms of articular rheumatism, and he established the rela-

tionship between "dry" arthritis and nodose rheumatism. His clinical lectures on the diseases of old age have a particular value, and he, together with Vulpian, was the first to report a case of ulceration of the tricuspid valve associated with typhoid, this study being the first of a series of publications that made ulcerative endocarditis more widely known. He was also the first to establish the symptoms and the pathogenesis of "intermittent claudication," resulting from arterial obliteration, of which he recognized the true nature by associating it with similar cases described eight years previously by Boulay and Goubaux in veterinary pathology. He was one of the first to make known in France exophthalmic goiter as described by Basedow in Germany and by Graves in England. He completed the description of aural vertigo, or Ménière's disease, and he conceived the idea of treating this affection with quinin sulphate, obtaining thereby satisfactory results. In 1872, he was appointed professor of pathologic anatomy at the Faculté de médecine of Paris, which position he held for a period of ten years, or until the chair was created for him at the Salpêtrière.

His enlightening lectures on diseases of the lungs, the liver, the biliary passages and the kidneys have remained famous. The stimulus that he gave to the study of pathologic anatomy at the end of the nineteenth century has been exceedingly fruitful, and the paths that he blazed will never be effaced. But it is mainly his works on neurology on which his undying fame will be based. Among these, I may mention his researches on softening of the brain, encephalitis and cerebral hemorrhage. He called attention, along with Bouchard, to the alterations of the smaller arteries of the brain which are the most frequent cause of cerebral hemorrhage. His work on the localization of diseases of the brain, which appeared in 1876, opened an important field. In numerous later publications he established the cortical regions injuries of which were followed by paralysis and descending degeneration. To the still controversial question of aphasia, he brought, in addition to general ideas, many facts critically established. His clinical studies on pure verbal blindness are, in this connection, especially interesting. His researches carried out, since 1862, in collaboration with Vulpian, on epileptoid trepidation of the foot, make him appear in the light of a veritable precursor. He discovered the signs by which the irregular and abortive forms of locomotor ataxia may be recognized. He emphasized the frequency of the laryngeal and gastric crises in tabes; these had been previously described, but he was the first to give a complete description of them. He discerned clearly the distinctive characters of arthropathies in tabes, which in England are designated as Charcot's disease. The term "Charcot's disease" is applied even more frequently to amyotrophic lateral sclerosis, the clinical and anatomic attributes of which have been brought out by his illuminating articles, the perfect accuracy of which has been confirmed by the neurologists of all lands. Charcot was among the first to recognize that infantile paralysis is associated with an alteration of the cells of the anterior columns of the spinal cord. He was the first, through his researches on pseudohypertrophic paralysis, to distinguish, in the group of progressive muscular atrophies, those that are of spinal origin and associated with myopathies. Finally, we may refer especially to his studies on reflex amyotrophy of articular origin, and to his important researches, together with Pierre Marie, on a form of familial progressive muscular atrophy, to which the term "Charcot-Marie atrophy" has been applied. Charcot and Vulpian detached and individualized multiple sclerosis, and made known the anatomic and clinical characters of that affection. Charcot determined the complex symptomatology and the anatomic substratum, and pointed out that the lesions affecting the continuity of the axis cylinders account for the absence of secondary degeneration of the spinal cord and for the fluctuations usually noted in this disease. At the same time, he showed in what respects multiple sclerosis differs from Parkinson's disease, with which it had been hitherto confounded.

After having devoted the greater part of his life to anatomoclinical researches, Charcot occupied himself in his later years more particularly with the so-called functional affections—neuroses, and neuropathic and psychopathic phenomena. He gave a noteworthy description of convulsive tics and pointed out the characters that distinguish them from Sydenham's and Huntington's chorea. His lectures on hysteria are widely known. Students, French and foreign physicians, men of letters, philosophers and all types of thinkers, attracted by the discussion of psychologic problems, thronged his lecture room. Since that time, the ideas of most neurologists with respect to many points pertaining to hysteria have changed. Nevertheless, the investigations of Charcot in this field were stimulative. He contributed to the establishment of the idea of hysteria in males. He gave an excellent description of certain forms of paralysis occurring mainly in brachial monoplegia, which he termed "hysterotraumatic." He pointed out how they could be distinguished from paralysis associated with alteration of the peripheral nerves, caused by a traumatism, and showed that paralysis presenting exactly the same characters could be produced by suggestion. Just at this time, many questions were being raised in regard to hypnotism, or the power over a hypnotized subject conferred by suggestion. By a series of skilfully conducted experiments, Charcot established beyond all doubt that even hypnotized subjects retain sufficient control over their actions to resist suggestions opposed to their moral principles, which demonstration helped to dissipate erroneous conceptions which might have had a baneful effect on the social order.

Charcot died suddenly, Aug. 16, 1893. During his lifetime, he was universally honored and enjoyed many special distinctions. Under his influence, Salpêtrière became a veritable mecca for neurology. In fact, one of the most important services that Charcot performed was the founding of a powerful school of neurology. His pupils on whom his mantle fell have made good use of the heritage, and it is to them that the modern French school of neurology owes its high rank.

BELGIUM

(From Our Regular Correspondent)

May 30, 1925.

A Medical Cruise

Bruxelles médical, the enterprising journal that projected the successful "journées médicales" now held annually in Brussels, is organizing a series of excursions for medical men. Short cruises to the northern countries of Africa have already been undertaken, and for September a cruise to the Orient with port calls in Egypt, Asia Minor and Greece has been announced.

Infant Mortality

The figures contained in a recently published report show a considerable decrease in infant mortality. Before the war, 15 per cent. of infants died before completing the first year of life, but now the mortality has been reduced to 10 per cent. The principal reasons for the decrease are: the decrease of the birth rate, the improvement in working conditions, the progress in public health service, and the spread of better ideas on child culture. The decrease has been steady, with two interruptions (1911 and 1921). In 1911 the rate rose to 16.65 and in 1921 to 11.53 per cent. as the result of epidemics of infantile diarrhea and enteritis during unusually hot summers. The percentage of infant mortality varies

with the provinces. The Flemish provinces, especially the western part of Flanders, present the highest rates; but, on the other hand, it is these provinces that show the most marked improvement since the decrease set in, probably because the birth rate has diminished proportionately more than in the Walloon provinces.

Pulmonary Cavities

The Société belge d'études de la tuberculose is still studying the radiologic diagnosis of pulmonary lesions. Dr. Geeraerd has compared the clinical observations with the radiologic findings in fifty cases of pulmonary cavities. In seeking to reach a diagnosis by auscultation, based solely on classical signs, he found twenty-one cases, half of the cavities being unrecognizable. But when he took in secondary, non-classical signs in twenty-four further cases, cavities were revealed. Roentgenograms and fluoroscopy proved inadequate in twenty-four cases. In three cases the cavities appeared intermittently, depending on whether they were empty or filled with pus. In six cases, however, roentgen rays permitted a positive diagnosis unsuspected by auscultation.

The Antivenereal Crusade

The Société belge de dermatologie is consulted every year by the minister of the interior and public health in regard to furnishing antisyphilitic remedies for the treatment of poor patients. Three phases of the question were studied by a joint committee: the remedies to be furnished, the serologic researches to be recommended, and modifications in the government's method of assisting. I have referred in previous letters to the organization in Belgium of gratuitous office treatment in venereal disease. This plan, to which the public health service has committed itself, has given such encouraging results that the government cannot change its present methods of intervention without running the risk of losing these benefits. The figures for syphilitic infection in 1924 are scarcely half as high as for 1923. Under these circumstances, all physicians should be permitted to prescribe gratuitously mercurials and iodids, products of the neo-arsphenamin and sulpharsphenamin types, and salts of bismuth. Members of the Société belge de dermatosyphiligraphie, on the other hand, should be allowed the prescription of arsphenamins and other arsenicals, preparations of bismuth for intravenous use and, in general, any antisyphilitic product that they hold is worthy of trial, provided a written request for the remedy be made and a report on its use is furnished the government.

The second point considered by the report was the circular of the minister of the interior and public health, relative to the standardization of serologic methods in conformity with the resolutions of the conference of Copenhagen. This circular recommends that all laboratories connected with the public health service shall apply simultaneously the Bordet-Wassermann test and the Dreyer flocculation test, or the so-called sigma test, because expressed in sigma units. This ministerial communication gives no information in regard to the conclusions of the conference of Copenhagen nor on the details of the execution of these methods. The report states that, in principle, the choice of methods to be employed should be left, in the main, to the initiative of the laboratories applying them. The following points were, however, accepted in the report: 1. All efforts should be concentrated on the correct application of the Bordet-Wassermann test. 2. The Bordet antigen is one of the best that can be employed. 3. The Hecht test, with unheated serum, supplements the findings of the Wassermann test. 4. While it is true that the flocculation tests have a scientific interest, there is no adequate reason for demanding their general use. It would, however, be eminently desirable, if the government contemplates exercising a certain control over laboratory research, to supply a limited number of selected laboratories with the necessary equipment. 5. There is no justification for demanding the general use of these tests, for to put them in the hands of those with insufficient experience would result in conclusions being reached that could not be rigorously defended.

RIO DE JANEIRO

(From Our Regular Correspondent)

May 15, 1925.

Reform of Medical Teaching

April 7, the *Diario Official* published the new regulations for medical teaching. The curriculum is divided into three courses: 1. Fundamental course, including the first three years. 2. General course, fourth and fifth years. 3. Special application or extension course, sixth year. First year: physics, general and mineral chemistry, general biology and parasitology, human anatomy. Second year: human anatomy, organic and biologic chemistry, histology, physiology. Third year: physiology, microbiology, pharmacology, general pathology. Fourth year: elementary medical chemistry, medical pathology, pathology. Fifth year: clinical medicine, surgical pathology, clinical surgery, hygiene, legal medicine, therapeutics. Sixth year: obstetrics, clinical pediatrics and surgical pediatrics and orthopedics, clinical obstetrics and gynecology, clinical neurology and psychiatrics, clinical dermatology and syphilography, clinical otorhinolaryngology and ophthalmology, tropical medicine.

A new development is the chair of tropical medicine. Students, before presenting themselves for examination in this branch, must have been approved in all other subjects. In addition, there will be a special course in hygiene and public health for physicians intending to devote themselves to sanitary work. This subject will be given in the Oswaldo Cruz Institute, and will include the following matters: general epidemiology and prophylaxis; special prophylaxis services; applied biometry and statistics; food sanitation; elementary bromatology; rural and urban sanitation; prenatal hygiene; infant hygiene and school sanitation; industrial and professional hygiene; sanitary administration, and sanitary legislation.

One of the results of the changes is the creation of an institute of anatomy, which will be devoted to teaching anatomy, pathology and legal medicine, in addition to conducting general research work. This institute will have four departments: anatomy; histology and microscopic anatomy; pathologic anatomy, and legal medicine. The new institute of radiology and electrology will be attached to the Rio Janerio Medical School. The following subjects will be taught: roentgen-ray diagnosis and electrodiagnosis, roentgenotherapy, radium therapy, electrotherapy, mechanotherapy and phototherapy.

Inflammation of the Brain

Cases of cerebral inflammation associated with rheumatism are quite rare. While some authors compute at 2 per cent. the cases of acute polyarthritis in which brain involvement ensues, the percentage seems to be even lower, in view of the lack of case reports. On this account, Dr. Eduardo Monteiro, a clinican in São Paulo, has presented a full study of a case in a multipara, aged 25, with cardiac fatty necrosis. She had always been very liable to colds. Last August, she had an attack of influenza with tracheitis, which lasted five days; on the sixth day the fever disappeared. The patient got up on the seventh day, but at noon had an acute chill, and a temperature of 40.2 C. (104.4 F.). There was pain in the left leg. The next day there was pain and reddening in the metacarpophalangeal joints. A diagnosis of acute poly-

arthritis was made, and sodium salicylate prescribed. In the afternoon, a severe headache appeared. At 9 o'clock the patient was screaming, very soon developed coma, and died at 2 o'clock in the morning. The whole process lasted but little over forty-eight hours, and the brain inflammation about nine. Two hours before death, the blood urea showed 0.571 mg. per liter. Dr. Monteiro studies the different types of the disease, as superacute; acute; subacute or chronic cerebral inflammation with rheumatism, and rheumatism with insanity. In his opinion, in addition to the pancreatic and suprarenal concomitants of rheumatism, there is also the brain complication.

Streptococcus Mucosus Otitis

Dr. Mario Ottoni has reported to the São Paulo Medical and Surgical Society a case of otitis media complicated with mastoiditis in an infant, aged 2½ years. The course lasted three or four days, and there was no fever or pain. In the material from the mastoid, *Streptococcus mucosus* was found in pure culture. Dr. Ottoni pleads for bacteriologic examinations in all inflammations of the ear, and especially when the slow course suggests the presence of an encapsulated coccus.

BERLIN

(From Our Regular Correspondent)

May 30, 1925.

Congress of the German Society of Internal Medicine

STAPHYLOCOCCUS AND STREPTOCOCCUS AFFECTIONS IN INTERNAL MEDICINE

Professor Schottmüller of Hamburg dealt with staphylococcus and streptococcus affections. Staphylococci and streptococci of skin and mucous membranes do not cause disease until they are carried into the blood and lymph streams. In the blood the micro-organisms soon perish, so that their presence cannot be demonstrated with certainty unless there are five billions or more to the cubic centimeter. The type of fever is dependent on the number of bacteria present. The fever is caused by the endotoxins of the bacteria, possibly in combination with body substances. A single invasion of bacteria into the blood stream does not produce sepsis, which results only when a focus becomes a constant source of bacterial invasions into the blood stream. Staphylococcus sepsis is caused by white or yellow, hemolytic or anhemolytic staphylococci. Rarely the infection may originate in the mucous membranes, as in empyema following bronchitis and bronchopneumonia, or as with sepsis following cholecystitis or abscess of the liver. In staphylococcus sepsis there are always small abscesses present in the kidneys. Also abscesses of the prostate, meningitis and myelitis in the lumbar portion of the spinal cord occur. Invasion of a vein causes chills and fever. In endocarditis, which always takes an acute lethal course, the murmurs may be absent, but the demonstration of the bacteria in the blood will usually be successful. The streptococcus sepsis arises through the anaerobic *Streptococcus putrificus*, *S. viridans* or *S. pyogenes*. In addition to the type of organism, the localization helps to decide the prognosis. Infection with *S. putrificus* may originate in purulent abscesses of the tonsils, otitis media, appendicitis or septic abortion. The prognosis is bad in almost all such infections. For *S. pyogenes*, which is found frequently in scarlet fever, the tonsils are often only the portal of entry but not the septic focus. Tonsillectomy is then of no avail. Likewise, all too frequently teeth are extracted on the supposition that in them is the septic focus. If small remnants of micro-organisms remain in the tissues, they may cause a chronic sepsis, in which vaccinotherapy is useful. Even though nephritis is not present, bacteria are excreted in the urine. Pneumonia with purulent clumps of bloody sputum awakens a suspicion of streptococcus sepsis. A third of the cases of puerperal fever are caused by *S. pyogenes*. Or it may cause a violent and lethal endocarditis, petechiae in the skin and evanescent periarticular symptoms. *S. viridans* causes in the meninges and the heart valves fatal infections; in the respiratory tract purulent catarrh, and in the biliary passages chronic inflammation (cholangeitis lenta), which heals following operation. Endocarditis lenta is commonly superimposed on an old heart valve defect. Anemia and low-grade fever appear after a long period of incubation. Prophylactic vaccination is of no avail.

Professor Dietrich of Cologne discussed the ability of the body to react to septic affections. The mechanical transference of bacteria from the septic focus to the blood stream and tissues does not constitute the immediate cause of the organic changes but the reaction of the human organism to the hematogenous action of the disease germs. This reaction takes place mainly in the cells of the vascular connective tissue. The virulence of the disease germs together with the reaction of the body determine the course of the infection, so that either a successful defense is established and an accentuation of the reactive capacity of the tissues is set up or an unretarded destruction of the tissues occurs. Resorption may cause a stagnation of the germs, so that the site of resorption may become the seat of the disease. Also endocarditis, mycotic aneurysms and periarteritis nodosa are similar localizations of the infection. Still less favorable than the failure to react is the complete exhaustion of the resorbent tissues in certain chronic affections, such as amyloidosis and cirrhosis of the liver.

Death of Hugo Liepmann

Hugo Liepmann, for many years professor of psychiatry and neurology in Berlin, died, the fore part of May, at the age of 62.

After specializing in philosophy for a time, he switched over to medicine. At the beginning of his medical career, he became an assistant of Jolly in Berlin, and later of Karl Wernicke in Breslau. In 1899, he accepted the post of assistant physician in the municipal psychopathic hospital at Dalldorf. In 1914, he was appointed the director of the psychopathic hospital at Herzberge. Owing to some unpleasantness, for which he was in no wise responsible, he withdrew from that institution in 1917. As none of the German universities had a vacant chair for this excellent psychiatrist and brain investigator, he withdrew to private life, although continuing his research work. He was, however, granted the title of ordinary professor. For a number of years, symptoms of paralysis agitans had been appearing, and when he saw (for he was fully conscious of the import of his malady) that his mental powers were also beginning to fail, he resorted to poison to end his life.

Liepmann's work in the field of medicine took two directions: He made a special study of the destruction of acquired motor and sensory associations—the processes designated as apraxia, asymbolia, agnosia and auditory amnesia—and their localization in the brain; and he investigated certain symptoms of psychic disturbance by the application of the more refined psychologic methods, in order to ascertain their mode of origin and their import. Not only the first of his articles, which dealt with the production of visions, in persons delirious from alcohol, by pressure on the eyeball (1894), but all the following essays were distinguished by the broad range of view, the precision of the researches, the keen interpretation and the clearness of the presentation. His conceptions of the mode of origin of apraxia, which he confirmed by studies on the cadaver, led him to the theory of the dominance of the left half of the brain, which, under certain circumstances, might become disastrous for the individual

and which one should endeavor to counteract by ambidextrous training. He erected approaches to other fields of clinical psychiatry by his articles on echolalia (1900) and on disturbances of conduct in mental patients (1905). His articles on flight of ideas (1903-1904), in which he set up a disturbance of the power of attention as the essential basis of hallucination, and his essays on the determination of psychopathic constitutions, are also worthy of note.

Death of Hermann Kossel

Prof. Hermann Kossel, director of the Hygienic Institute in Heidelberg and brother of the physiologist Albert Kossel of the same university, succumbed, the end of April, to an attack of cardiac paralysis, at the age of 61.

In 1891, Kossel became an assistant in the Berlin institute for infectious diseases. He was at that time greatly influenced by Behring's discovery of serotherapy, and he performed meritorious service in testing its efficacy in diphtheria. Further researches of Kossel on the formation of toxins by diphtheria bacilli led to the important finding that the toxin is exogenous and that the dead, washed bacilli contain very little of it. The young investigator, together with R. Pfeiffer, was chosen to accompany the expedition that Robert Koch undertook in 1898 to study malaria in Italy. Kossel's further researches on malaria had to do mainly with avian malaria (*Halteridium*), in which connection he discovered a reliable method of demonstrating the fecundation process in the sexual forms of parasites. In 1899, he was assigned a post in the imperial public health service, and soon afterward was appointed, together with A. Weber, to head a commission to study in Finland hemoglobinuria in cattle. The observations made in Finland contributed to the discovery that the disease is transmitted by ticks. The same year, Kossel and Frosch were sent by the government to Portugal to study the plague, an epidemic of which had broken out in Oporto. Later, in collaboration with Weber and others, he sharply delineated the differences between the human and the bovine type of tubercle bacillus. He demonstrated the constancy of these types and proved that the bovine tubercle bacillus is of exceedingly rare occurrence in pulmonary tuberculosis in man. In 1904, Kossel was called to the University of Giessen to assume the chair of hygiene as the successor of Gaffky. In 1910, he accepted an invitation to become the director of the Hygienic Institute connected with the University of Heidelberg, where he remained until his death.

Marriages

DUMA CARROLL ARNOLD, Roebling, N. J., to Dr. Ann Whelan of Philadelphia, at New York, May 16.

HENRY HUNTON HAMPTON, Chattanooga, Tenn., to Miss Dorothy Detrick of Caldwell, Kan., June 2.

ALLEN A. BERLIN, Newfoundland, Pa., to Miss Mary Elizabeth Lance, of Scranton, Pa., May 23.

ROBERT JULIAN ESTILL, Lexington, Ky., to Mrs. Elizabeth Hinton of Cincinnati, June 6.

JACK C. HUTTON, Abilene, Kan., to Miss Margretta Lea of Ashley, Ohio, June 11.

EUCLID BORLAND GILL to Miss Mary Munholland, both of New Orleans, recently.

WILLIAM ADDISON JACQUES to Miss Edna Jenkins, both of Ashland, Pa., June 24.

RALPH H. CREIGHTON to Miss Dorothy Gilman, both of Minneapolis, in May.

WILLIAM BRADY SHARKEY to Miss Oma Hartsock, both of Clinton, Ill., June 3.

JACOB BUCKSTEIN to Miss Estelle Schwartz, both of Brooklyn, June 18.

Deaths

Henry Arnold Fairbairn ⊕ Brooklyn; University of Virginia Department of Medicine, Charlottesville, 1877; Medical Department of Columbia College, New York, 1878; member of the American College of Physicians; past president of the Medical Society of Kings County; on the staffs of the Brooklyn, St. John's, Long Island College, Bushwick and Swedish hospitals; aged 70; died, June 12.

L. Hulbert Milligan, Morristown, Tenn.; University of Maryland School of Medicine, Baltimore, 1890; member of the Tennessee State Medical Association; past president of the Hamblen County Medical Society; for several years member of the county school board; served in the M. C., U. S. Army, during the World War; aged 60; died, May 22, of chronic nephritis.

Halbert Severin Steensland, Syracuse, N. Y.; Johns Hopkins University Medical Department, Baltimore, 1899; emeritus professor of pathology and formerly director of the pathologic laboratory, Syracuse University College of Medicine; at one time on the staffs of St. Joseph's Hospital and the Hospital of the Good Shepherd; aged 52; died suddenly, May 30.

Earl A. Stone, Los Angeles; University of California Medical School, San Francisco, 1903; formerly demonstrator of anatomy, Oakland College of Medicine and Surgery; at one time on the staff of the Alameda County Receiving Hospital, Oakland; also a druggist; aged 47; died, June 6, of potassium cyanide poisoning.

Virginius Williams Harrison ⊕ Richmond, Va.; University of Virginia Department of Medicine, Charlottesville, 1887; associate professor of obstetrics, Medical College of Virginia; formerly professor of materia medica and therapeutics, University College of Medicine; aged 60; died in June.

John Ferguson Black, Halifax, Nova Scotia, Canada; Medical Department of Columbia College, New York, 1868; formerly demonstrator of anatomy, Halifax Medical College; at one time on the staff of the Victoria General Hospital; died, March 24, at Stone, Somersetshire, England.

Robert Emmet Coughlin, Brooklyn; Medical Department of the University of the City of New York, 1892; member Medical Society of the State of New York and the Brooklyn Society of Internal Medicine; aged 57; died, June 8, at the Norwegian Hospital, following an appendectomy.

Hamilton Bernard Lowry, Lincoln, Neb.; Cincinnati College of Medicine and Surgery, 1876; member of the Nebraska State Medical Association; formerly professor of nervous diseases, Nebraska College of Medicine; aged 75; died, May 21, of heart disease and chronic nephritis.

George H. Ripley ⊕ Kenosha, Wis.; Hahnemann Medical College and Hospital, Chicago, 1891; past president of the Kenosha County Medical Society; member and at one time president of the Wisconsin State Board of Medical Examiners; aged 64; died, June 13, of heart disease.

Alice Bennett ⊕ New York; Woman's Medical College of Pennsylvania, Philadelphia, 1876; member of the Philadelphia Neurological Society; for fifteen years on the staff of the New York Infirmary for Women and Children, where she died, May 31, of angina pectoris, aged 74.

Claude Adelbert Freligh, Easton, Pa.; University of Vermont College of Medicine, Burlington, 1899; member of the Medical Society of the State of Pennsylvania, and the American Academy of Ophthalmology and Oto-Laryngology; aged 62; died, June 7, of bronchopneumonia.

Elbert Osborne Day, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1913; member of the Medical Society of the State of Pennsylvania; on the staff of the Germantown Hospital, where he died, June 13, of septicemia, aged 39.

Edward E. Bryson, Pittsburg, Texas; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1891; member of the State Medical Association of Texas; aged 66; died, May 31, at a sanatorium in Dallas.

Francis A. Pender, Verona, N. J.; Georgetown University School of Medicine, Washington, D. C., 1917; associated with the U. S. Veterans' Bureau, Newark; on the staff of the Essex Mountain Sanatorium, where he died, April 28, aged 41.

⊕ Indicates "Fellow" of the American Medical Association.

Benjamin E. Gore, Bardstown, Ky.; University of Louisville School of Medicine, 1883; member of the Kentucky State Medical Association; past president of the Nelson County Medical Society; aged 68; died, May 31, of heart disease.

William Christopher Rife, Villa Ridge, Ill.; Vanderbilt University School of Medicine, Nashville, 1894; member of the Illinois State Medical Society; aged 54; died, June 11, at St. Mary's Infirmary, Cairo, following a long illness.

Charles Edward Williamson, Brooklyn; Long Island College Hospital, Brooklyn, 1896; member of the Medical Society of the State of New York; formerly on the staff of the Bushwick Hospital; aged 52; died, June 14.

John Henry Harris, Franklinton, N. C.; Bellevue Hospital Medical College, New York, 1886; member of the Medical Society of the State of North Carolina; aged 61; died, June 13, at the Sarah Leigh Hospital, Norfolk, Va.

Edward Kinne ✠ Elkhorn, Wis.; University of Virginia Department of Medicine, Charlottesville, 1896; formerly on the staff of the Walworth County Insane Hospital; aged 68; died suddenly, June 10, of heart disease.

Elisha Wilton Brown, Albany, N. Y.; New York Homeopathic Medical College and Hospital, 1894; on the staff of the Memorial Hospital; aged 54; died, June 5, at Addison Bridge, Maine, following an operation.

Andrew S. Ellett, Christiansburg, Va.; University of the South Medical Department, Sewanee, 1901; member of the Medical Society of Virginia; aged 45; died, June 3, of heart disease, following an appendectomy.

Walter Perkins Hutchinson, Abington, Mass.; Medical School of Harvard University, Boston, 1901; member of the Massachusetts Medical Society; member of the board of education; aged 58; died, May 14.

Frederick D. Haldeman, Berkeley, Calif.; University of Nebraska College of Medicine, Omaha, 1882; aged 66; died, June 11, at the University of California Hospital, San Francisco, of skull fracture.

Robert Sylvester Morris, New York; Medical Department of Columbia College, New York, 1877; member of the Medical Society of the State of New York; aged 71; died, June 17, of heart disease.

Lawrence Francis Fluehr, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1924; intern, Misericordia Hospital; aged 26; was drowned, June 14, while canoeing.

James R. Phillips, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1893; member of the Medical Society of the State of Pennsylvania; aged 58; died, June 8.

Caleb W. Presnall ✠ Denver; University of Louisville (Ky.) School of Medicine, 1905; served in the M. C., U. S. Army, during the World War; aged 49; died in May, at Pueblo, Colo.

Senter Lee Gettys ✠ St. Louis; Missouri Medical College, St. Louis, 1895; served in the M. C., U. S. Army, during the World War; aged 50; died at St. Luke's Hospital, June 6, of nephritis.

Richard Thomas Hardy, Baltimore; College of Physicians and Surgeons, Baltimore, 1893; formerly superintendent of the Sydenham Hospital; aged 70; died, June 6, of heart disease.

George N. McLoughlin ✠ Seattle; George Washington University Medical School, Washington, D. C., 1895; city health commissioner; aged 57; died, June 3, following a long illness.

William Frederick Baker ✠ Wausau, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1904; aged 46; died, June 4, at the Wausau Memorial Hospital, of typhoid fever.

Richard Joseph Thompson, Fall River, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1882; formerly on the staff of the Union Hospital; aged 68; died in June.

Moris Lawrence Naughton, London, Ohio; Ohio State University College of Medicine, Columbus, 1914; member of the Ohio State Medical Association; aged 35; died, May 22.

Oscar Henry Coumbe, Washington, D. C.; National University Medical Department, Washington, 1891; member of the Medical Society of Virginia; aged 66; died, June 12.

B. Frank Landis, Tiskilwa, Ill.; Jefferson Medical College of Philadelphia, 1877; member of the Illinois State Medical Society; aged 74; died in June, of heart disease.

William Andrew Eiland, Samson, Ala.; Southern Medical College, Atlanta, 1881; member of the Medical Association of the State of Alabama; aged 66; died, May 30.

Stuart Ommanuey Hector, Rahway, N. J.; Bellevue Hospital Medical College, New York, 1879; aged 70; died, recently, at a local hospital of diabetes mellitus.

Maurice Uran, New York; University and Bellevue Hospital Medical College, New York, 1902; aged 48; died, May 28, at Bremerhaven, Germany, of heart disease.

Eugene Thomas Galligan, Boston; Medical School of Harvard University, Boston, 1882; member of the Massachusetts Medical Society; aged 69; died, June 4.

Willard Nelson Simmons ✠ Niantic, Conn.; University of Vermont College of Medicine, Burlington, 1889; aged 65; died, June 5, following a long illness.

William Grabill Binkley, Washington Boro, Pa.; University of Michigan Medical School, Ann Arbor, 1869; Civil War veteran; aged 81; died, June 2.

Frank Gilbert Stroud ✠ Moorestown, N. J., Jefferson Medical College of Philadelphia, 1885; formerly health officer of Moorestown; aged 63; died, June 6.

Daniel Campbell, Canfield, Ohio; Western Reserve University School of Medicine, Cleveland, 1881; aged 74; died, May 22, of cerebral hemorrhage.

James Polk Wallace, Albany, Ore.; University of Tennessee College of Medicine, Memphis, 1880; formerly mayor of Albany; aged 72; died, June 4.

Seymour M. Cornell, Bronson, Mich.; Bennett College of Eclectic Medicine and Surgery, 1890; aged 56; died, June 6, of cerebral hemorrhage.

William B. Moore, Brownsville, Tenn.; University of Nashville Medical Department, 1866; Civil War veteran; aged 89; died, June 10.

Charles Simmons Foster, Chester, S. C.; Meharry Medical College, Nashville, 1919; aged 33; died, May 21, of acute dilatation of the heart.

Ralph Case Spence ✠ Dallas, Texas; Medical School of Harvard University, Boston, 1918; aged 31; died, June 8, at the Baylor Hospital.

George Miller Aylesworth, Collingwood, Ont., Canada; Victoria University Medical Department, Toronto, 1869; died recently, at Trenton.

Lewis W. Knapp, Grosse Point, Mich.; Detroit College of Medicine, 1896; aged 53; died recently, of chronic parenchymatous nephritis.

Samuel Francis Jackson, New York; Yale University School of Medicine, New Haven, 1907; aged 41; died, June 10, of heart disease.

William H. Friedman ✠ New York; St. Louis College of Physicians and Surgeons, 1902; aged 50; died, June 9, of angina pectoris.

James J. Holden, Williamsburg, Ohio; Physio-Medical Institute, Cincinnati, 1875; mayor of Williamsburg; aged 72; died, June 3.

Archibald Cuning Livingstone, Pensacola, Fla; Chicago Homeopathic Medical College, 1899; aged 49; died, June 6, at Tampa.

Edmund Strudwick Ashe, Wadesboro, N. C.; College of Physicians and Surgeons, Baltimore, 1885; aged 67; died, May 24.

Ralph Oliver Hollister, Hammond, La.; University of Michigan Medical School, Ann Arbor, 1891; aged 62; died, June 7.

George C. Babcock, Lafayette, La.; Medical Department University of Louisiana, New Orleans, 1881; died recently.

Azmon G. Blankenship ✠ Rye, Ark.; Kansas City College of Medicine and Surgery, 1916; aged 37; died, May 1.

Marion P. Winkler, Tchula, Miss.; Memphis (Tenn.) Hospital Medical College, 1882; aged 55; died, May 17.

Homer C. Noble, Sanford, Fla.; Cincinnati College of Medicine and Surgery, 1875; aged 73; died, May 22.

Rolland D. Earley, Hancock, Wis. (registered, Wisconsin, under the Act of 1900); aged 67; died in June.

A. J. Weeks, Sioux City, Iowa (licensed, Iowa, 1886); Civil War veteran; aged 79; died recently.

George Dwight Brannon, Crown Point, Ind.; Chicago Medical College, 1886; aged 64; died, June 7.

William Henry Smith, Shellrock, Iowa; Chicago Medical College, 1878; aged 74; died recently.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

LISTERINE

Physicians not infrequently ask if Listerine is an objectionable preparation to be used as a simple mouth wash. The answer is that so far as the composition of Listerine is concerned, the product used for such a purpose is unobjectionable. Unfortunately, the manufacturers are not content to recommend it and advise it exclusively for the field in which it has a place.

Some years ago, Torald Sollmann, dealing with "The Broader Aims of the Council on Pharmacy and Chemistry," contributed one article under the title "Some Studies in Bottled Psychotherapy." In this article Sollmann appraised the efficiency of Listerine thus:

"What a fine antiseptic odor and taste are possessed by thymol! After comparing the odor and taste of a saturated solution of thymol with a 5 per cent. solution of phenol, or a 1 per cent. solution of corrosive sublimate, could one doubt for a moment which is the most active? Evidently not, for thymol, plus small quantities of boric and benzoic acid, under the name of Listerine, sells at a dollar a bottle. It is really too bad that bacteria cannot recognize a superior antiseptic as well as the nose—for, according to the bacteriologic test, as quoted by Wood, four hundred and ninety-five dollars' worth of Listerine has the antiseptic action of a cent's worth of corrosive sublimate; or fifteen dollars' worth of Listerine equals a cent's worth of carbolic acid."

While the preparation was formerly advertised to the medical profession with unwarranted and absurd claims, now that medical endorsements have popularized it with the public, it is exploited with an air of conservatism; even a statement of composition is given. The following "formula" appears on trade packages:

"Constituents: — Thyme, eucalyptus, baptisia, gaultheria and mentha, of each one part; boric and benzoic acids, twenty-nine parts; ethyl alcohol, two hundred and fifty parts; water to make one thousand parts."

The formula is essentially meaningless, for the product obviously does not contain "thyme, eucalyptus, baptisia, gaultheria and mentha," though it may contain some preparation of these drugs. The term "mentha" leaves one in doubt whether peppermint, spearmint or some other member of the mint family is represented. The statement that one thousand parts contain "boric and benzoic acids twenty-nine parts" fails to state the amount of each of these two alleged ingredients.

While the claims as to the antiseptic efficiency and the claim that it is a deodorant (it is not a deodorant, but merely covers one smell with another) may in general do little harm when Listerine is used as a "toilet preparation," the advertising that accompanies trade packages contains recommendations for its use in serious conditions, the self-treatment of which is a danger to the individual and inimical to the public health. The potency for harm which these recommendations have is all the greater because the manufacturers assert that they "do not advocate self-medication even with Listerine." The trade package circular recommends the use of Listerine in "tonsilitis"; this may easily lead to its employment in undiagnosed cases of diphtheria, and dependence on it in such a condition may be the means of spreading this infectious disease. The circular suggests its use in "bronchitis"—which may be tuberculosis or pneumonia. It recommends its use in "leucorrhea"; this may lead to the self-treatment of a serious infection. The self-treatment of any such conditions is fraught with danger to the individual and the community.

Incidentally, the advertising that goes with Listerine packages also advertises "Lithiated Hydrangea" and thus may lead the laity to purchase this nostrum at department store drug counters.

A MENACE TO HEALTH

Millions of dollars are being spent yearly in advertising of fake patent medicines and fraudulent food products

Not only is there an economic loss but the health of men, women and children is seriously affected

Guarantees of fraudulent medicine vendors will not restore ruined health

The Better Business Bureau is prepared to give you correct facts without cost regarding fake medical or food preparations now being advertised and sold.

Investigate—Before You Invest

Reducing Soaps	Patent Medicine Fakes
Reducing Foods	Habit Forming Drugs
Poisonous Cosmetics	Consumption Cures
Cancer Cures	Asthma Cures
Rheumatism Cures	Epilepsy Cures
Alcoholic Patents	Reducing Medicines

Reputable Druggists do not recommend fake cures

Better Business Bureau

308-309 Richardson Bldg.

The Associated Advertising Clubs of the World, a national organization doing splendid work in the cause of "truth in advertising," has local component groups, usually called "Better Business Bureaus." The Better Business Bureau of Toledo, Ohio, has a particularly aggressive manager, Mr. F. M. Willson, who, in common with some of the other Better Business Bureaus, keeps in close touch with the work of the Propaganda Department of THE JOURNAL. Above is reproduced an advertisement (reduced in size from the original) that was run by the Better Business Bureau of Toledo in the newspapers of that town. Read it carefully. It is encouraging in that a problem that has for years been left to the medical profession is now being tackled by the advertising men. Further cause for encouragement lies in the fact that newspapers of today will publish an advertisement of this kind. Twenty years ago the hold of fake "patent medicines" and fraudulent food products on the advertising departments of most newspapers would have resulted in the rejection of such an advertisement as that shown above.

Nibbling Away at the Practice of Medicine.—Much of the activity of social organizations and health and welfare departments does and should receive our hearty support; but with the tendency as it is today, we should be keenly alert that we are not caught napping. . . . All about us are welfare-health organizations nibbling away at the practice of medicine. The sad part is that this has come about in too many instances by the indifference or credulity of our profession or the cupidity of some of its members, and where such has been the case no criticism is valid except criticism of ourselves; but in many instances no need for such organizations exists, and the service is established for reasons of purely personal advantage.—Follansbee, George Edward: Annual Address of the President, Ohio State Medical Association, *Ohio State M. J.* **21**:411 (June) 1925.

Correspondence

"IVY POISONING"

To the Editor:—Referring to our paper on ivy poisoning (THE JOURNAL, June 27, 1925, p. 1996), one of the volunteers who received preventive treatment has recently reported to us with an extensive vesicular ivy dermatitis of the face, arms, hands and legs. It developed spontaneously. The particularly interesting feature of this outbreak was its severity at the places which had been experimentally inflamed six weeks previously. The circular inoculation site, and the garter-like band around the arm where the adhesive plaster had been applied were mapped out most sharply.

G. L. KRAUSE, M.D.,
F. D. WEIDMAN, M.D., Philadelphia.

THE ERYTHROPOIETIC ACTION OF GERMANIUM DIOXID

To the Editor:—In THE JOURNAL, June 6, Bailey, Davidson and Bunting make certain criticisms of the conclusions drawn by me and my associates from observations on the erythropoietic action of germanium dioxid in the rat. These workers object to our use of the rat on the ground that "the withdrawal of the amount of blood necessary for careful counts soon creates an anemic stimulus to the bone marrow which would tend to cloud the issue." In our paper (*J. Exper. Med.* **35**:173 [Feb.] 1922), tables are given which definitely show that the control *untreated* rats did not exhibit any increase in the erythrocyte count of the blood as drawn by our technic which was in any way statistically valid or comparable to that found to occur in the rats receiving germanium dioxid. If we had not had these untreated controls for comparison, the criticism of Bailey, Davidson and Bunting might have been well taken. But since we did have controls to which no germanium was given, and which were litter mates, kept under exactly similar conditions of diet and environment, and from which the blood for examination was taken in exactly the same way as from the germanium dioxid treated rats, the criticism made of this phase of the study is beside the point.

With regard to the question of the toxicity of the compound, it should be noted that we were studying the *relative* toxicity of germanium and arsenic. Our conclusion was: Germanium dioxid "can be administered subcutaneously in doses up to 180 mg. per kilogram of body weight of the experimental animal, without apparent harmful effects. . . . It is therefore evident that germanium does not possess the toxicity for the living organism which is exhibited by arsenic" (*J. Pharmacol. & Exper. Therap.* **19**:331 [May] 1922). In our third paper we reported certain changes in the liver and spleen, *J. Exper. Med.* **35**:507 [April] 1922). These may be interpreted by some as evidence of toxicity.

Now Bailey, Davidson and Bunting admit errors of diet and of dosage in their experiments. In addition, they failed to provide litter mates, of common dietary and environmental history for untreated controls, from which organs could be removed for examination in comparison with the test groups at the end of the experiments. This is a fatal defect in any experimental work, as any investigator working with laboratory animals susceptible to infectious lesions and alterations due to differences in diet and environment well knows. It should not be necessary to point out the absolute need for strict control in these matters.

Finally, we used in our experiments a germanium dioxid that was pure for atomic weight determinations made by Müller and was arsenic free. Later material obtained from the New Jersey Zinc Company, used to confirm the earlier findings, was purified by twice distilling in chlorin, and was then arsenic free. This we believed and still believe essential procedure, since it takes only 8 mg. of arsenic per kilogram of body weight to kill a mature albino rat. Much less would easily produce the lesions noted by our critics. We have no reason to retract our conclusions and invite an impersonal comparison of our methods of control, procedure and the results obtained thereby, with those of other workers.

FREDERICK S. HAMMETT, Philadelphia.
Wistar Institute of Anatomy and Biology.

[NOTE.—The letter of Dr. Hammett was referred to Drs. Bailey, Davidson and Bunting for reply.—ED.]

To the Editor:—The criticism of our work with germanium dioxid by Dr. Hammett requires only a few words in reply. It was just because we realized that "negative" experiments must be free from dietary criticism that we repeated our experiments with a correction of that feature, even though we had made correction in our first series and still obtained negative results.

In regard to controls, it may be said that as far as the blood reactions are concerned the animals injected furnished their own control as to food and environment by being held for observation over a suitable period before being treated with the drug. For pathologic control, Dr. Hammett may accept or not the twenty-five years' experience of the senior member of the group with normal and pathologic rabbits under laboratory conditions.

The germanium dioxid used in our experiments was obtained directly from Professor Dennis of Cornell "for biologic research," and relying on his reputation as a chemist, I will admit we did not look the gift horse in the mouth to the extent of having chemical analysis made to determine purity of the drug.

Finally, we suggested an interpretation of Dr. Hammett's results with rats, which we did not put to experimental test.

C. H. BUNTING, M.D., Madison, Wis.

USE OF ELECTROTHERAPEUTIC DEVICES

To the Editor:—In THE JOURNAL, June 20, p. 1941, appeared an inquiry from a Nebraska physician and your reply. This reply states erroneously that the Model "P" Dynelectron is not powerful enough for strong electrocoagulation or for autocondensation. Thousands of honest and intelligent physicians are conscientiously using this apparatus and securing positive demonstrable results from it.

For autocondensation the Dynelectron will deliver 1,000 ma. on an average size patient; on one with heavy wrists and arms as much as 1,100 ma.; and on a light weight at least 900 ma. In actual treatment we have rarely if ever found more than 800 ma. used, and often a smaller amount. Further, we guarantee the apparatus to deliver its full rating continuously, twenty-four hours a day, without injury or overheating.

I have witnessed hundreds of electrocoagulation operations by as many operators and I have yet to see a single instance in which the full power of the machine was required.

The Dynelectron has both a high and a low voltage electrocoagulation circuit. Before the present models were placed on the market, all makes of powerful apparatus had only a comparatively high voltage on the electrocoagulation circuit. The high voltage is necessary in working on bone, cartilage or fatty tissue. On the other hand, for work on tissue only, which constitutes the largest percentage of all electrocoagulation done today, a low voltage is preferable, giving a much better control of the field of operation and a much better

cosmetic end-result. The Model P and Model F Dynelectrons have always been equipped with both the high and the low voltage circuits. The decided advantage of having both modalities is shown by the fact that practically all manufacturers have incorporated the low voltage coagulation in their apparatus since it was first brought out on the Dynelectron.

We submit letters from many physicians, users of the Dynelectron, which demonstrate the truth of our statements.

THE LIEBEL-FLARSHEIM COMPANY,
G. H. LIEBEL, President, Cincinnati.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THROBBING IN THE EARS

To the Editor:—I have a patient, aged 65, who has a throbbing in the ears which she says occurs at the same time as the heart beat. Her ears have been examined, but we have found nothing to cause this condition. The blood pressure varies from 120 to 150 systolic and from 80 to 85 diastolic. Will you kindly give your opinion and any suggestion as to treatment? Please omit my name.

K. C. W., Ont., Canada.

ANSWER.—The causes of a "throbbing" or other noises in the ears are either local conditions present in the middle or inner ear, or certain systemic abnormalities. In the ear itself, we often find that secretion in the middle ear (either pus or mucus), as in an otitis media or a chronic tubal catarrh, or adhesions following various inflammatory processes, may produce low pitched, rumbling sounds. When there is an infection or degeneration of the inner ear or the auditory nerve, there is usually a high pitched whistle or noise.

We know that a severe anemia often produces a hemic murmur, but there is also the possibility that the patient hears the pulse because of the close proximity of the internal carotid artery to the middle ear as it passes through the temporal bone. While it is true that high blood pressure may produce noises or tinnitus aurium, such is probably not the case in the patient whose blood pressure our correspondent has given. We would suggest that pressure with the thumb be applied over the carotid artery to see whether that will temporarily stop the throbbing, or at least reduce the sensation. If this proves to be so, it might be advisable to try for an hour or so at a time a tight fitting bandage or neck band in order to see whether that will give the patient any temporary relief. At the same time, it might be advisable to give sodium bromid, in 0.65 gm. doses three or four times a day, well diluted with water, in the effort to diminish the noises. When sleeping, the patient might try a rather high pillow in order to avoid as much as possible passive congestion in the head.

TREATMENT OF SNAKE-BITE

To the Editor:—Can you inform me whether the chlorids of mercury have any action (local or general, curative or preventive) on snake-bite? I want to ask you this, because I have read from the "Scientific American Cyclopedia of Formulas," Edition 28, by Albert A. Hopkins, the following statement which I am willing to quote entire: "Dr. Corisiano d'Utra of Brazil says that persons suffering with snake-bite may be cured in all cases by taking three doses, two hours apart, of 30 grains of calomel in an ounce of lemon juice. He further declares that whoever will carry about his person a bag containing from 75 to 300 grains of corrosive sublimate need have no fear of serpents. They will flee from him and if by chance he is bitten, the bite will be harmless." In case you deem this as a nonscientific treatment at all, can you suggest to me the best treatment or treatments you know for snake-bite, nowadays most accepted? Please omit my name.

M.D., Manila, P. I.

ANSWER.—The suggestion that carrying on one's person a bag of mercuric chlorid would act as a preventive of snake-bite or make the bite harmless is, of course, preposterous. The calomel treatment suggested is likewise not established, and it is difficult to see how it could do any good.

The indications in the treatment of snake-bite are the same as those in any other poisoning; namely, first, to remove poison; secondly, to remove its effects. Immediate interruption of absorption should be attempted by a stasis bandage applied proximally to the bite for, say, twenty minutes, and loosened after this for a time at intervals so as to permit very gradual absorption as well as to maintain sufficient circulation in the limb and to prevent damage from constriction.

Removal of the poison from the wound—after having enlarged it by an X-shaped incision about one-fourth inch deep—by sucking, by washing or by destruction by red heat or by means of a caustic is the next thing to attend to. Any one of a number of chemical caustics may be used, such as strong acids, phenol (carbolic acid), tincture of iodin, tincture of ferric chlorid or alcohol. Potassium permanganate is especially recommended; its crystals rubbed into the wound, and a 2 per cent. solution injected into and around it. Mercuric chlorid applied locally would also precipitate and destroy the toxic proteins of the venom, but, by reason of its toxicity after absorption, would not be as safe a caustic as the others mentioned.

The third most important remedy is the injection of antivenom serum, which must be specific for the particular venom involved.

Lavage of the stomach with dilute potassium permanganate solution, and "washing of the system" by the introduction of large quantities of fluid are of more doubtful benefit; so is the use of alcohol freely enough even to produce drunkenness. Less questionable is the use of strychnin, which is recommended in this condition even in doses of 10 mg. (!) every fifteen minutes, until slight spasms occur. Aromatic spirit of ammonia, 1 c.c., in water may be used every fifteen minutes, if required for collapse.

It is best to keep from being bitten by wearing strong shoes and leather puttees when going through thickets, by avoiding the handling of snakes, and by protecting their natural enemies.

VITAMINS IN MARGARINS

To the Editor:—Kindly inform me as to the comparative value of nut and animal fat oleomargarins and dairy butter with respect to their content of vitamins needed for growth and maintenance of health in adults.

M. B. DEAN, M.D., Candor, N. Y.

ANSWER.—Margarins made from nut oils are totally deficient in vitamin A—the fat-soluble factor. Oleomargarin, made from animal fats, contains very definite amounts of the fat-soluble factor. Dairy butter, it is well known, varies greatly in its content of the fat-soluble A factor. The variations are due to the various conditions, such as the rations on which the butter fat has been produced and the length of time that the cream has been kept before being made into butter.

INTRAVENOUS AND HYPODERMIC TREATMENT FOR WORMS

To the Editor:—I have just been informed that a certain physician advised a patient that he had "worms," and then immediately proceeded to give him "punctures" (hypodermic injections) as treatment. I do not know whether he gave these injections for parasites or not; but I am much interested to know whether there is any kind of hypodermic treatment for intestinal worms or other intestinal parasites, and shall greatly appreciate your giving me this information. Also, I might ask, is carbon tetrachlorid ever given, or can it be given, hypodermically for this purpose?

LOUIS HANNAH, M.D., Augusta, Ga.

ANSWER.—There is no known hypodermic or other needle treatment for intestinal worms. The only such treatment for intestinal parasites is the injection of emetin in intestinal amebiasis. Carbon tetrachlorid would never be given hypodermically as an anthelmintic, for it is a violent poison as it enters the system and it is only the fact that it is absorbed with great difficulty that renders it safe as an anthelmintic.

INHALATION OF MERCURY IN THE TREATMENT OF SYPHILIS

To the Editor:—May I ask what your records show of the earliest date when metallic mercury was used in the inhalation treatment of syphilis?

J. W. STEVENS, M.D., Mount Vernon, N. Y.

ANSWER.—Drs. Cole, Gericke and Sollmann, in an article on the treatment of syphilis mercury inhalations (*Arch. Dermat. & Syph.* **5**:18 [Jan.] 1922), assign the first use of fumigations of mercury in syphilis to Angelo Bolognino, professor of surgery at the University of Bologna in 1506. The authors state that Jacques Catance also used them about the same time. The authority for these statements is Jean Astruc (Traité des maladies vénériennes, Paris, Cavelier and Sons **2**:177, 1754).

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13. Ch., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, July 7-8. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

CALIFORNIA: San Francisco, July 6-9. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

COLORADO: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, July 14-15. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, July 14. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, July 14. Sec., Dr. Edgar P. Copeland, Stoneleigh Court, Washington.

HAWAII: Honolulu, July 13. Sec., Dr. G. C. Milnor, 401 S. Beretania St., Honolulu.

INDIANA: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, 333 State House, Indianapolis.

MAINE: Augusta, July 7-8. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, July 14-16. Sec., Dr. Charles E. Prior, 144 State House, Boston.

NORTH DAKOTA: Grand Forks, July 7. Sec., Dr. George M. Williamson, 860 Belmont Ave., Grand Forks.

OREGON: Portland, July 7-9. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 7-11. Sec., Dr. J. George Becht, State Capitol, Harrisburg.

PHILIPPINE ISLANDS: Manila, Aug. 11. Sec., Dr. Jose V. Gloria, 686 Rizal Ave., Manila.

SOUTH DAKOTA: Deadwood, July 21. Dir., Dr. H. R. Kenaston, Bonesteel.

UTAH: Salt Lake City, July 7. Dir. of Regis., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

WASHINGTON: Olympia, July 6. Sec., Mr. William Melville, Olympia.

WEST VIRGINIA: Martinsburg, July 7. Sec., Dr. W. T. Henshaw, Charleston.

New Mexico April Examination

Dr. William T. Joyner, secretary, New Mexico Board of Medical Examiners, reports the written examination held at Santa Fe, April 13-14, 1925. The examination covered 12 subjects and included 100 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Eleven candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
University of Toronto	(1923)	84.8

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Birmingham Medical College	(1909)	Texas
University of Colorado	(1917), (1923)	Colorado
Louisville Medical College	(1904)	Washington
Medical Department of the Tulane University	(1906)	Texas
Minneapolis College of Physicians and Surgeons	(1895)	Minnesota
University of Nebraska	(1921)	Nebraska
Long Island College Hospital	(1890)	Arizona
Eclectic Medical Institute, Cincinnati	(1896)	Illinois
University of Tennessee	(1905) Oklahoma, (1912)	Mississippi

Maine March Examination

Dr. Adam P. Leighton, Jr., secretary, Maine Board of Registration of Medicine, reports the written examination held at Portland, March 10-11, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 4 passed and 1 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital of Philadelphia	(1924)	83
McGill University	(1923)	88
University of Montreal	(1924)	76
University of Cologne, Germany	(1922)*	79

FAILED		
College	Year Grad.	Per Cent.
University of Montreal	(1922)	74

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
University of Maryland	(1923)	Maryland
University of Vermont	(1924, 2)	Vermont

* Graduation not verified by the American Medical Association.

Book Notices

THE LIFE OF SIR WILLIAM OSLER. By Harvey Cushing. In two volumes. Cloth. Price, $12.50 net. Pp. 1413, with illustrations. New York: Oxford University Press, 1925.

"In the hope that something of Osler's spirit may be conveyed to those of a generation that has not known him."

With this dedication, in part, Dr. Harvey Cushing presents to the literary and medical worlds the first biography of Sir William Osler. *First* we emphasize because, no doubt, this excellent accumulation of Osleriana will form the basis of many an interpretative biography of the future. Indeed, Dr. Cushing makes little pretense to biographic art, modestly expressing his intention to let Osler's "story so far as possible tell itself through what he puts on paper." "Here are merely the outlines of the final portrait," says Dr. Cushing, "to be painted out when the colors, lights and shadows come in time to be added."

On July 12, 1849, William Osler was born in a parsonage in upper Canada. It is interesting to learn that he was intended for the ministry until, of his own accord, he chose medicine as a career. But all through his younger days the religious and the spiritual played an almost equal part with the scientific in guiding his habits of thought. As might have been expected, the books in the Osler home were essentially religious in character, and his education was largely conducted in institutions over which presided school masters whose title of "reverend" was perhaps their most significant qualification. Early in the career of the boy there came to light that tendency to practical joking which was to be an outstanding characteristic and which perhaps enabled him so well to survive with equanimity numerous changes of scene and such tribulations as came on him from time to time. Fortunately for the young man, his personality attracted friendships of great value in determining the scientific trend of his life; thus he passed through the shaping hands of three preceptors, who were able to mold him constantly to his advantage. One might well pause here to discourse on the meaning of such preceptorship and to hope for the time in the future when each aspirant to medicine or to other of the social professions may again have opportunity for this type of guardianship.

The Reverend W. A. Johnson was the first of his teachers to establish in William Osler a scientific curiosity. This preceptor had a microscope and a library which, though chiefly ecclesiastical, likewise contained scientific volumes of considerable merit. He it was who gave Osler opportunity early to develop a technic in the preparation of material for microscopy and to learn the scientific method.

Dr. Cushing gives us much material relative to the life of the boy Osler and the shaping of his career; nevertheless, it is difficult to get any real conception, even from the large amount of material presented, of what it was that made him later an important figure among men. For instance, it is said:

> Though a high-spirited boy and the ringleader in many escapades, Osler is said by his contemporaries to have been so straightforward, manly, and clean—"unobtrusively good without sanctimonious pretence"—that he exerted a splendid influence on the morale of the school.

That is, after all, the kind of thing that is said about all men who ultimately become successful; it is perhaps most likely to be said in retrospect of those who achieve mercantile or financial success, but it has even been said of Jesse James that in his youth he was "straightforward, manly and clean."

While under the tutelage of the Reverend Johnson, Osler came also to some extent in remote contact with Dr. James Bovell, medical adviser to the school, but at the same time dean and professor of medicine in Trinity College and later a member of the faculty of the Toronto Medical School. Bovell had studied in Dublin under Stokes and Graves, and, strangely enough, turned from medicine to the church.

It is well known that Osler loved above all other books Browne's "Religio Medici." When he was but 17 years of age, the book was brought to his attention by the Reverend Johnson, who used to read from it to his class. When he was 18, his elder brother presented him with a copy of a book containing a sketch of Sir Thomas Browne. It was when he was 19 and still attending Trinity College for his second year in arts that

he announced to his parents and to the faculty his determination to go into medicine. Of his medical education there appears to be but little record. We are told that his surviving classmates are unanimous in stating that he was exceptionally studious and faithful in his attendance at lectures; that he spent most of his hours in dissecting rooms, and when not so engaged was always to be found looking through a microscope at Bovell's cells; that he was a general favorite not only with the class but also with the faculty, and that the teachers were apt to turn to him when others could not answer their questions. There is even a story of the young, somewhat small Osler being the only member of the class successful in boxing with the class champion. This sort of thing one would prefer to have omitted from the biography of such a man as Osler; it also appears regularly, in fond retrospection, in all of the standard biographies of all the successful men.

Amidst this unessential detail appear, however, many significant facts. Perhaps one of the most striking is the statement that Osler, when coming to a decision, would write almost automatically again and again the name, "James Bovell, M.D., James Bovell, M.D." Here is a demonstration of an influence of the greatest importance. When the boy was not attracted by the lectures in the medical school or when he pondered an idea, his notes are marked ever and again by the writing of the name of James Bovell. It is to Bovell at this period in the life of Osler that most of the readers' interest must be given, for this man was essentially the determiner of his future. It is well that Osler was permitted in 1870, on the occasion of the amalgamation of Toronto and Trinity schools of medicine, to pay a tribute to James Bovell, which he did in the following words:

> When in September, 1870, he wrote to me that he did not intend to return from the West Indies, I felt that I had lost a father and a friend; but in Robert Palmer Howard of Montreal I found a noble stepfather, and to these two men and to my first teacher, the Rev. W. A. Johnson of Weston, I owe my success in life—if success means getting what you want and being satisfied with it.

In 1870, William Osler took up the study of medicine at Montreal in the McGill Medical School. The chapters covering this portion of his biography give us perhaps too brief a picture of the school of that day. He went abroad for study in London in 1872, and, indeed, conducted some elementary research of considerable interest. At this time, though but 23 years of age, he had already published several papers of importance, and we find him composing letters to the Canadian medical journals descriptive of scientific work abroad. He went also to Berlin, and his letters give excellent pictures of the student life of that day. In Vienna, in 1874, he kept a brief diary which, however, is filled with quite inadequate notes. Finally, he returned to Canada and for a time took over the work of a local practitioner in Dundas. The first fee entered in his account book read "Speck in cornea . . . 50 cents." He served also as locum tenens in Hamilton, receiving $25 and a pair of old fashioned elastic sided boots.

Finally, on July 6, 1874, he received the offer of a lectureship on the "Institutes of Medicine" in McGill; this incidentally without doubt through the influence of his preceptor, R. P. Howard. One finds him now conducting his life in the usual manner of such lecturers, teaching physiology and histology, the subjects comprised by the "Institutes of Medicine." The students paid fees directly to the instructors, who provided equipment, and it is significant that Osler purchased twelve microscopes and also numerous photographs of leaders of medicine from abroad. He continued also to write essays on many medical topics. The microscopes were purchased with funds which he received for attendance on the smallpox ward in Montreal, and the chapter dealing with his life while studying smallpox and with the attack which he himself suffered is exceedingly important. It is interesting to learn also that on May 1, 1876, the position of pathologist to the Montreal General Hospital was created, and that William Osler in the necropsy room of that institution laid the foundation of his subsequent career as a clinician. It must be remembered that at this period of medical history pathology was dominant and, indeed, was coming completely into its proper position in the medical plan.

From this time the life of Osler becomes that of other great practitioners, but one exceptionally full of meetings, writing for medical periodicals, lecturing and investigations. It should be reiterated that his was an especially full career marked by assiduous attention to dozens of activities, institutions and organizations, and illustrating again that it is those men who are doing the most who are able to take on additional activities.

It is not within the scope of a review to cover the details in the subsequent life of Osler at Montreal; to tell of his call to Philadelphia, which occupies the second part of the first volume, together with the subsequent removal to Baltimore. All of these things are told by Harvey Cushing with tremendous attention to minutiae and with the reproduction apparently in toto of Osler's rather large correspondence. Much of it appears for the casual reader quite superfluous. Indeed, the extent of the material of this biography makes it difficult even for the careful reader properly to assign significance to individual items, and, in fact, even to carry in mind such facts from the beginning of the work until its end. Of particular moment, however, are the factors underlying the calling of Osler to each of his great American appointments and the methods of selection of the staff of the Hopkins hospital and medical faculty. Here, too, appears the account of Osler's marriage.

The second volume of the biography of Sir William Osler is devoted to the Oxford period: "from a noisy Baltimore corner and the hurly-burly of the preceding month to the quiet of an Oxford suburb." Naturally, the Osler domicile became a sort of American shrine. It was at this time, October, 1905, that Mrs. Osler was enabled to write: "The new edition of the textbook is just out, and No. 100,000 has been given to Revere"; an indication of the sales of the "medical bible."

The interest of Sir William Osler in medical history, the manner in which he inspired young men, his citizenship, his contributions to medical literature and to the building of medical libraries; in fact, all of the numerous activities which made him the exceedingly broad person that he was, are reflected in the more than fourteen hundred pages of these biographic volumes, books that will merit an entire summer of reading and which, as has been suggested, will form the basis of numerous shorter and simpler essays for both medical and lay consumption.

The literary style of Cushing's biography of Osler is excellent, though marked occasionally by Americanisms such as the following:

> The despised female, the day before having upset a pail of slops on the stairs, which soused one of the boys.
> The art of illustration was not his best card.

The predominant notes of the work, so far as the character of Sir William Osler is concerned, are his essentially prankish nature, his tremendous activity, his undoubted puritanism and his admiration for the classic.

The accumulation of this material and the writing of this book has been clearly a labor of love for Dr. Cushing. One can imagine him wishing again and again to discard some letter, some anecdote or some memory, and finally determining to include it in the work. The notes which occasionally creep into the comment give promise that Dr. Cushing himself may see fit in the future to prepare a work somewhat more limited in detail and far more valuable as an interpretative analysis of Osler's life.

DES KINDES ERNÄHRUNG, ERNÄHRUNGSSTÖRUNGEN UND ERNÄHRUNGSTHERAPIE. Ein Handbuch für Aerzte. Von Professor Ad. Czerny, und Professor A. Keller. Second edition. Paper. Band I, Teil I. Price, $5.40. Pp. 668, with illustrations. Band I, Teil 2. Price, $4. Pp. 669-1078, with illustrations. Leipsic: Franz Deuticke, 1925.

The new edition of this valuable treatise on the physiology and pathology of infant nutrition, the first volume of which is at hand, has undergone many modifications and revisions, and records the advances that have taken place in the knowledge of normal and pathologic nutrition in infants. The authors consider in great detail the nutritional requirements of the normal infant as well as maternal nursing, wetnursing and artificial feeding. The book is a perfect encyclopedia, giving numerous references and experimental data and tables on all that refers to the chemistry and physiology of digestion and the metabolic changes that occur during infancy. Perhaps in no other volume will be found so complete an account of the chemical composition of the infant

body. The authors consider in great detail the chemical substances that compose the normal body, together with the changes in the fetus at varying ages, and they continue their studies by investigating the influence of nutrition on the chemical composition of the infant organism. One short chapter is devoted to an interesting discussion of reserve depots in the fetus and infant body, repositories for various mineral substances essential for the upbuilding processes of the developing organism. In this respect, more is known about iron than any other mineral. The principal depots for this substance are found in the liver, spleen and bone marrow. In the newly born animal the principal storehouse for iron is the liver. It is estimated that there is ten times as much iron in the liver of the new-born calf as in that of the grown animal. The authors point out that in the storing of various mineral substances in the repositories or organs there seems to be a dependence of one substance on another; for example, the deposition of calcium depends on the presence of phosphorus, and both seem to depend on the association of other alkalis. The deposition of iron seems to vary in its ability to be stored by the presence of phosphorus. The authors think that this is a field of metabolism which merits further investigation, and gives promise of shedding new light on the chemistry of metabolic processes. They also think that this process of storing reserve supplies in various repositories is a different matter in infants than in adults. So many topics are considered, including physiology and anatomy of the digestive tract, bacterial flora of the tract in both health and disease, and the metabolism of infancy and childhood and also the problems of growth and development, that these volumes will be for a long time a source book and guide for those who are interested in the problems of infant and child nutrition. The teacher, the writer and the practitioner will frequently find a ready explanation for difficult and unsolved problems in these encyclopedic volumes.

MEDICAL SPANISH (EL ESPAÑOL PARA EL MÉDICO). By A. A. Moll, A.M. Cloth Price, $1. Pp. 133. Chicago: American Medical Association, 1925.

SPANISH-ENGLISH MEDICAL DICTIONARY (DICCIONARIO MÉDICO ESPAÑOL-INGLÉS). By A. A. Moll, A.M. Cloth. Price, $1. Pp. 127. Chicago: American Medical Association, 1925.

EL INGLÉS PARA EL MÉDICO (MEDICAL ENGLISH). Por Ledo A. A. Moll. Cloth. Price, $1. Pp. 135. Chicago: American Medical Association, 1925.

Medical Spanish and Inglés para el Médico (Medical English) are complementary handbooks, the former being in English and the latter in Spanish. The two follow the same plan. "Medical Spanish" presents the points of Spanish grammar and of the Spanish language that the English-speaking physician might wish to acquire. Rules for pronunciation of Spanish, and grammatical principles and constructions are given in a clear, understandable style, and with a wholesome brevity. Sample prescriptions written in Spanish, tables of weights and measures, temperature and currency are shown. Following this is an extensive vade-mecum, or collection of phrases, such as might be used by the physician in his work. These phrases are grouped into typical conversations under various conditions, such as receiving the patient, taking the clinical history, making inquiries about injuries, the nervous system, visual system, respiratory diseases, genito-urinary system, and giving instructions to a family or to a patient. A generous list of English medical terms followed by the Spanish equivalent is provided. These are arranged according to subjects, such as muscles, arteries, bones, nerves, diseases, surgery, insects, parasites, bacilli, drugs and poisons. "Medical Spanish" will appeal to those physicians who may be interested in Spanish from the cultural point of view, or to those who may come in contact with Spanish-speaking patients. It would be extremely valuable to any physician contemplating a sojourn in Spanish-speaking countries.

Inglés para el Médico (Medical English) is of interest to the Spanish physician wishing to learn the language of his English colleague. The explanations in this book are in Spanish, and the pronunciation and the grammatical principles of the English language are explained in a brief and simple manner. The vade-mecum, or section devoted to typical conversations of the physician, is in Spanish and followed by the English equivalent with phonetic pronunciation. The list of medical terms is much the same as in the work "Medical Spanish," but naturally the order is reversed, the Spanish word being given first and followed by the English equivalent.

The Spanish-English dictionary is a compilation of the medical words that a Spanish physician would find necessary in the practice of his profession. The common, everyday terms of the layman are not included. The dictionary is strictly medical. For example, under the "A's" one finds the words running: "ablacació, weaning; ablandar, to soften; ablepsia, blindness," and so on. About 9,000 terms are included, the Spanish words appearing in strict alphabetical order followed by the English equivalent, with the phonetic pronunciation of the latter for the convenience of Spanish-speaking physicians. The dictionary, however, is equally useful for the English-speaking physician wishing to learn Spanish.

The three books are a distinct contribution to the promotion of better understanding between the physicians of North America and of Latin America. No similar works are extant, so far as we know, and these will fill a practical purpose.

NEW AND NONOFFICIAL REMEDIES, 1925. Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1925. Cloth. Price, $1.50. Pp. 461. Chicago: American Medical Association, 1925.

New and Nonofficial Remedies is the publication through which the Council on Pharmacy and Chemistry annually supplies information with regard to proprietary and unofficial medicaments which are offered to the medical profession and which are deemed worthy of recognition. For each product there is given a statement of its composition, actions, uses and dosage. Each edition differs from its predecessor in that the preparations that were investigated during the year and found acceptable have been added; in that many products have been omitted because they were found no longer to comply with the criteria that formed the basis of admission or were taken off the market and—most important—in that the subject matter of the book has been brought in accord with the most recent knowledge of drug action. A glance at the preface of the 1925 edition shows how extensively the book has been revised: of the revisions it will suffice to state that a chapter on medicinal dyes has been added and the portion dealing with endocrine preparations has been rewritten to bring it in accord with the series of articles on glandular therapy, published in THE JOURNAL last year under the auspices of the Council. The book contains an appendix (printed on buff paper) which contains a list of references to reports of the Council and other publications concerning articles not described in New and Nonofficial Remedies. Every physician has need for a book of reference such as this volume to which he may turn for trustworthy information with regard to proprietary medicines.

PATHOLOGISCH-ANATOMISCHE SEKTIONSMETHODE. Nach den Grundsätzen des Pathologischen Institutes der Prager Deutschen Universität. Herausgegeben von Dr. Béla Halpert. Mit einem Geleitwort von Prof. Dr. A. Ghon, Vorstand des Institutes. Paper. Price, 50 cents. Pp. 48. Vienna: Julius Springer, 1924.

The author gives a condensed description of the post-mortem method used and adopted at the Institute of Pathologic Anatomy of the German University of Prague. This method is a combination of the classic methods of Virchow and Rokitansky, and is a modification of Zenker's method first described by Hauser in 1913 in his book, Zenker's Post-mortem Technic, and consists in removing from the body the entire system of the organs after a careful examination in situ. The organs of the chest and neck are removed together, and in the same way the organs of the upper abdominal cavity, the organs of the genito-urinary system and so forth. The description of each single organ is supplemented with exact anatomic notes, including the inspection of the blood vessels and the lymphatic system. The author does not give the description of postmortem examination of the bones and joints.

Miscellany

CHILD MARRIAGE IN THE UNITED STATES

In fourteen states, boys may marry at 14 and girls at 12 years of age, provided only that the consent of the parents has been given. In nine states the minimum marriageable age for girls is 14, in eight states, 15, and in seventeen states, 16 years. These figures, taken from a report on the extent of child marriage in the United States published by the Russell Sage Foundation (Richmond, M. E., and Hall, F. S.: Child Marriages, New York, Russell Sage Foundation, 1925), bring to light an interesting social problem.

No adequate proof of age is required by many license bureaus, nor do they demand actual evidence of parental consent where this is legally required. The investigators have estimated the extent of child marriages in our country by applying actuarial formulas to census statistics. Apparently 343,000 women and girls began their married lives as child brides within the last thirty-six years, but the marriage of boys is not so large a problem.

Voicing their regret of the American sentimentality that invests child marriages with romance, their review of the physiologic and social aspects of the custom reveals broken-down mothers of middle age, girls married before puberty to men a score or more years their seniors, child-divorce, weakly offspring of immature mothers, and marriage to permit a girl or boy to leave school, or to prevent criminal prosecution of a man.

For 250 cases, Richmond and Hall were able to secure some pertinent facts concerning the marriages of children (that is, boys of 17 or younger, and girls of 16 or younger). As twenty of these children married one another, 240 such marriages were investigated. Information was gathered from juvenile courts, judges, license issuers, chiefs of police and social agencies. Obviously, the data obtained from these sources lack a due proportion of marriages with "happy endings." However, the cases illustrate the ease with which tragedies may occur for both partners to the marriage, for the children resulting from such unions, and for the parents of boys and girls. These marriages occurred in thirty-one states and were by no means limited to foreigners. Of ninety couples whose present status could be learned, only sixteen pairs were living together. In many instances the marriage was marked by great haste, which, in some cases, amounted to abduction. More than half of the 240 licenses were issued illegally. The illegality in most instances was failure to secure parental consent, although in 109 instances the parents agreed to the marriage. Thirty of the children were under the legal age for the granting of a license even with the consent of the parents. Of these children, four were 11 years of age, five were 12, and eighteen were 13 years of age. The marriage licenses were obtained because of laxity in the administration of the law; for example, affidavits of age are accepted instead of proof, and parents' signatures are not verified.

One of the worst features of these illegal child marriages is the ease with which annulment may be obtained, thus instituting a system of trial marriages for the youthful. Such annulments are not readily secured in supreme and appellate courts, but are given without reluctance by many inferior courts. This feature of the situation is worst in states that have a relatively high minimum age for marriage without parental consent, since in many instances this consent is given for selfish motives or with fallacious well-meaning. The courts guard the property of minors from parental errors of judgment or intent.

The grant or refusal of a license to a girl who claims to be pregnant entails several problems. Where no adequate proof of pregnancy is demanded, the age limit is lowered at the will of the contracting parties. Even if the pregnancy exists, the age-old remedy of marriage may not be the best solution for the child mother or for the other parties concerned. Child welfare standards are not in agreement with some legal and accustomed solutions for such involved situations.

The next steps in dealing with child marriage—as outlined by Richmond and Hall—are directed toward improved administration of the law, as well as improvements in legal enactments. The license issuer may be aided or prevailed on to demand proofs of age, identification of candidates for a marriage license and of persons claiming to be parents, application in person by both parties, and verification of the signatures of parents. The law in states now lacking adequate legislation should be revised, as fast as public opinion permits, in order to establish a reasonable and enforceable minimum marriageable age, to require a few days' notice of intention to marry, to abolish the marriage-market town, and to destroy the fee system for the recompense of license issuers.

NATIONAL CAMPAIGN AGAINST BOVINE TUBERCULOSIS

The U. S. Department of Agriculture reports that the nation-wide drive to eradicate bovine tuberculosis up to April 1 included 10,201,492 cattle under supervision; 6,777,624 cattle in herds successfully passing the first test; 1,187,908 cattle in fully accredited herds; 617,810 cattle tested during March; 19,841 cattle reacting to the test during March; 3,498,072 cattle on the list to be tested, and sixty-nine counties recognized as free from bovine tuberculosis. Reports show unusual interest in tuberculosis eradication on a county-wide basis. In the first three months of the year, the number of counties having less than 0.5 per cent. of the disease increased from fifty-three to sixty-nine. Veterinary officials of the Bureau of Animal Industry consider that such progress is proof of the practicability eventually of freeing entire states from bovine tuberculosis.

TRAINING SCHOOLS FOR COLORED NURSES

The Hospital Library and Service Bureau of the American Conference on Hospital Service has just completed a study of the educational facilities for colored nurses. Questionnaires were sent to the 1,696 accredited schools of nursing in the United States, forty-eight state boards of nurse examiners, 933 city and county health officers, various national associations, and a special list of institutions. The report comprises two volumes, copies of which have been placed on file with the American Nurses Association, National Organization for Public Health Nursing, and the National League of Nursing Education. There are fifty-four accredited schools for nurses which admit colored students, sixty-six hospitals which have colored graduate nurses, fifty-nine departments of health which employ colored nurses, and nineteen visiting nurses' associations which use colored nurses. There were twenty-one hospitals among the 1,696 institutions reported on which used colored interns.

LESS BLINDNESS FROM OPHTHALMIA NEONATORUM

The National Committee for the Prevention of Blindness states that there has been about a 50 per cent. decrease in the amount of blindness among pupils from ophthalmia neonatorum. A table covering the last seventeen years showing the number of new admissions annually to classes for the blind in public schools and to schools for the blind shows that in 1907-1908, 26.6 per cent. of the total new admissions were due to ophthalmia neonatorum and that there has been a gradual decrease, excepting a few years, until in 1923-1924 the percentage of new admissions due to this cause was only 12.7. The campaign for the elimination of ophthalmia neonatorum obviously is not markedly reflected in these statistics until rather recently. It requires from eight to ten years before children affected enter schools for the blind. The national committee has among its members now 146 ophthalmologists and 233 other physicians.

Medicolegal

Improper Action on Physician's Report

(Gannuzzi v. Forwood Const. Co. et al. (N. Y.), 207 N. Y. Supp. 363)

The Supreme Court of New York, Appellate Division, Third Department, says that in this proceeding under the workmen's compensation law the referee at the close of the last hearing at which evidence was taken directed the claimant to be examined that day, and reserved decision. Dated that same day, there appeared in the record a detailed report by a physician, which concluded: "It is my opinion that the injury might precipitate an already existing condition present." This report evidently influenced the decision of the state industrial board, because it found that the injury "so aggravated and activated the preexisting condition" as to cause the subsequent condition from which it found the claimant to be suffering, and for which it made an award in his favor. From the record it did not appear that the employer and the insurance carrier had any knowledge of this report of the physician, or any opportunity to examine him in reference thereto. It appeared to have been received outside of any regular hearing. It was error for the board to receive and act on this report without the knowledge of the employer and the insurance carrier, thus depriving them of the right of examination in respect thereto. Wherefore the award for the claimant and a subsequent award confirming it were reversed and the matter sent back for further action.

Refusal to Submit to Immobilization Unreasonable

(Chicago Bridge & Iron Works v. Sabin et al. (Okla.), 231 Pac. R. 851)

The Supreme Court of Oklahoma holds that where an employee is injured and claims compensation under the workmen's compensation laws of that state, and receives it up to and including the date when he should have been cured had he submitted to medical and surgical treatment in no manner endangering life to the slightest degree, or occasioning pain, he cannot recover compensation for an increase of disability due to his failure to accept such treatment and use ordinary care to avoid aggravating the injury.

The claimant in this case was injured, the court says, by trying to keep a box of rivets from falling on his feet. Considering the testimony of six physicians who examined him, there could be no doubt that the seat of the trouble was in the sacro-iliac joint. Two of the physicians who examined him shortly after the accident strongly advised placing the injured member in a plaster cast, for the purpose of immobilizing the joint until the muscles, ligaments and tendons were so repaired and strengthened as to hold the joint in place. To this treatment he refused to submit, although it is a matter of common knowledge that incasing an injured leg in a plaster cast is not dangerous to life, and while professing no knowledge of medicine or surgery it appears to the lay mind that the treatment advised was plain, simple, practically painless, though inconvenient perhaps, and the reduction of a fracture, or displacement or dislocation of a joint, and the immobilization of the injured part, by splints or otherwise, would be the first remedy appealing to a man injured, perhaps hundreds of miles from medical aid. After this claimant's refusal to submit to any medical treatment, so far as the record disclosed, four physicians examined him. Three of these examinations were made six months after the injury was sustained, and one fourteen months thereafter, and the physicians agreed that the "sacro-iliac joint had slipped." It requires no excursion into the realms of conjecture or speculation to arrive at the conclusion that this slipping was the natural and inevitable result of the claimant's refusal to submit to immobilization, and his continued use of the injured leg while in a weakened condition.

The claimant owed a duty, not only to the employer, but to himself and family, to restore himself to perfect health as speedily as possible, and to this end he was required to act reasonably, and this, it is apparent, he wholly failed to do. In arriving at the conclusion that he acted unreasonably in refusing the simple medical or surgical treatment advised by the physicians, and that the industrial commission committed error in extending the period of compensation, from a date nine months after the accident occurred, "until the termination of disability or until otherwise ordered by this commission," the court does so fully cognizant that it has held that the commission is without jurisdiction to order an injured employee to submit to a major operation involving a risk of life, however slight, in order that the pecuniary obligations created by the law in his favor against his employer may be minimized. But the case at bar did not fall within the scope of the decision so holding.

Duty Not to Turn Insane Persons Loose

(Ex parte Smith (Ark.), 266 S. W. R. 950)

The Supreme Court of Arkansas, in affirming a decree of a chancery court dismissing a petition for a writ of habeas corpus directed to the superintendent of the United States Veterans' Hospital No. 78, directing him to produce the petitioner before the court and to show cause why the petitioner should not be discharged, says the petitioner alleged that he was imprisoned and illegally restrained of his liberty by reason of the belief of the medical officers of said hospital that he was insane and a dangerous person to be at large, and not by reason of any judgment or order of any court. The superintendent of the hospital filed a response to the petition, and, although the petitioner was entitled to have his mental condition inquired into, for the purpose of determining whether or not he was entitled to be discharged from the hospital, his attorney was content with standing on a demurrer to the response, which set forth all the facts and circumstances under which the petitioner was being detained in the hospital. The demurrer conceded those facts to be true, and the case must be treated here as if the chancellor had found on proper evidence the state of facts set forth in the response.

According to those facts, the petitioner was insane and was a dangerous paranoiac on account of having homicidal tendencies, which had been demonstrated by overt acts in the commission of homicides, and by a recent homicidal attempt. Under those circumstances, the petitioner was not entitled to an absolute discharge from the custody of the hospital authorities. According to the allegations of the response, which must be taken as true, the hospital authorities rightfully received the petitioner into their custody, and the court should not require them to turn him loose and permit him to go at large, if he was afflicted in the manner and to the extent set forth in the response. In this respect the hospital authorities were in the same attitude and were charged with the same duties as any other person having rightful custody of an insane person. The duty is not to abandon an insane person until he can be taken into custody by such person or institution as is charged by law with the duty to care for the insane. The Arkansas statutes provide that, when a person is insane so as to endanger his own person or the person or property of others, it shall be the duty of his guardian or other person under whose care he may be, and who is bound to provide for his support, to confine him in some suitable place until the next term of the probate court for his county which shall make such order for the restraint, support and safe-keeping of such person as the circumstances of the case shall require.

Adequate provision is made by law for the custody and care of insane persons, and of course these statutes have full application to an insane person in the United States Veterans' Hospital; but, until some steps are taken for the legal care and custody of such insane person, the court will not require the absolute discharge of the patient from custody. The facts of this case, as detailed in the response of the superintendent of the hospital, did not show that the petitioner was entitled to an absolute discharge, and the chancery court was correct in refusing to grant relief.

Society Proceedings

COMING MEETINGS

Montana, Medical Association of, Lewistown, July 8-9. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.

National Medical Association, Chicago, Aug. 25-28. Dr. Clyde Donnell, 121 Parrish Street, Durham, N. C., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

35: 153-320 (May 15) 1925

*General Morphology of Pancreatic Cell Function in Terms of Nucleocytoplasmic Relation. D. H. Dolley, St. Louis.—p. 153.

*Mitochondria and Colloid in Thyroid of Adult Albino Rat. W. Ma, Peking, China.—p. 199.

Thyroid Apparatus. XXIV. Growth of Heart, Lungs, Liver, Kidneys, Spleen, Submaxillary Glands, and Eyeballs in Albino Rat Thyro-Para-Thyroidectomized and Parathyroidectomized at 75 Days of Age. F. S. Hammett, Philadelphia.—p. 223.

A. Development of Adventitial (Rouget) Cells on Blood Capillaries of Amphibian Larvae. E. R. Clark and E. L. Clark, Augusta, Ga.—p. 239.

B. Relation of "Rouget" Cells to Capillary Contractility. E. R. Clark and E. L. Clark, Augusta, Ga.—p. 265.

Morphologic Study of Panniculus Carnosus and Its Genetical Relationship to Pectoral Musculature in Rodents. O. R. Langworthy, Baltimore.—p. 283.

*Roentgen Ray Studies on Bronchial Movements. C. C. Macklin, London.—p. 303.

Pancreatic Cell Function.—The changes and size of function in the pancreatic cells Dolley found exhibit a stage-by-stage sequence of nucleocytoplasmic relations from metabolic rest to metabolic exhaustion identical with those of other previously investigated somatic types. The mechanistic nucleocytoplasmic process of function, therefore, is identical in all specialized cells and rests on a common quantitative principle. The nucelocytoplasmic sequence of functional stages affords new morphological criteria of the formative metabolic side of secretion as a process in continuity.

Cells of Thyroid.—Ma states that the cells of the thyroid gland in the adult white rat pass through a secretory cycle, the chief feature of which is the formation of mitochondria which later dissolve in cytoplasmic vacuoles to form colloid. Successive stages of regeneration ripening, and exhaustion may be distinguished in the cycle.

Study of Bronchial Movements.—Roentgenograms made by Macklin from a normal human thorax in the stages of full expiration and full inspiration show that there is an elongation of the trunk and all of the branches of the bronchial tree in inspiration and a corresponding shortening of these structures in expiration. The work shows the importance, in clinical practice, of comparative roentgen-ray studies showing full expiration and full inspiration.

American Journal of Electrotherapeutics and Radiology, New York

43: 163-312 (May) 1925

Hepatic and Cardiac Syndrome. W. Martin, Atlantic City, N. J.—p. 163.

American Journal of the Medical Sciences, Philadelphia

169: 469-624 (April) 1925

*Pain Phenomena of Face; Special Reference to Trigeminal Neuralgia. C. H. Frazier, Philadelphia.—p. 469.

*Blood Platelets in Leukemias. G. R. Minot and T. E. Buckman, Boston.—p. 477.

*Effects of External Heat on Human Body. R. Pemberton, Philadelphia.—p. 485.

*Dystrophia Adiposogenitalis, with Atypical Retinitis Pigmentosa and Mental Deficiency, Laurence, Biedl Syndrome: Four Cases. S. Solis-Cohen and E. Weiss, Philadelphia.—p. 489.

*Bell's Palsy; Four Cases of Infectious Origin. V. Dabney, Washington, D. C.—p. 505.

Automatic Synchronization of Roentgen-Ray Exposures. F. M. McPhedran and C. N. Weyl, Pittsburgh.—p. 510.

Electrocardiographic Studies of Effects of Ether on Living Cat's Normal Heart. H. R. Miller and Felberbaum, H. T. Krigel, New York.—p. 516.

*Pathology of Fatal Measles. J. Denton, Boston.—p. 531.

Retropharyngeal Lymphadenitis in Infancy and Early Childhood. S. McLean, New York, and F. H. von Hofe, South Orange, N. J.—p. 543.

Gastric Analysis (Double Simultaneous Fractional Analysis). R. T. Ellison, Philadelphia.—p. 550.

*Comparative Value of Blood Transfusion and Blood Tonics in Secondary Anemias. M. L. Janes, New York.—p. 563.

Calcium and Blood Coagulation; Use of Salted Plasma as Method of Estimating Clotting Time. C. H. Smith, New York.—p. 572.

Icterus Index. J. V. Barrow, E. L. Armstrong and W. H. Olds, Los Angeles.—p. 583.

Etiology of Trigeminal Neuralgia.—Whatever may be the cause of major trigeminal neuralgia, Frazier is convinced that infection plays no part. The pain is relieved only by two measures, alcoholic injection and section of the sensory root. The latter procedure, a major operation, is almost devoid of risk. Frazier has performed more than 300 major operations in cases such as these, the last 205 with only one death.

Blood Platelets in Leukemias.—The blood platelets were studied by Minot and Buckman in seventy-five cases of chronic myelogenous, in fifty cases of chronic lymphatic leukemia and in thirty-five cases of acute leukemia. In chronic myelogenous leukemia the numbers of these elements may be normal, enormously increased, or greatly diminished, and in chronic lymphatic and acute leukemia it is the rule to find them below normal. Petechiae and other hemorrhages associated with decrease of blood platelets are common, and hemorrhages, but not petechiae, may occur in chronic myelogenous leukemia when the platelets are much increased in number.

Effects of External Heat on Human Body.—Pemberton has for some years been studying the changes accruing from exposure of the body to external heat in the form of radiation from electric lamps, the so-called "bake." Such exposure results in a heightened bloodflow, and increased metabolism and in the elimination of acids, chiefly carbon dioxid which escapes through the lungs, urine and sweat in the order of magnitude named. This leaves an excess of alkali in the blood which then changes its reaction, becoming more alkaline. In the compensatory effort to meet this situation, the excess of alkali is eliminated through the sweat and urine. If carried to extremes tetany may result. The available evidence indicates that part of the benefit of the sweat process in some forms of nephritis is due to loss of acid substances from the body, with consequent benefit to the acidosis frequently accompanying renal disease.

Dystrophia Adiposogenitalis.—Solis-Cohen and Weiss report on four of eight brothers and sisters of Italian parentage, who exhibited marked adiposity with mental deficiency, genital dystrophy and diminution of vision. Two of the abnormal children show polydactylism. The eyegrounds showed atypical retinitis pigmentosa. The fat distribution was largely of the girdle, mons and mammary type. A hypophysial lesion could be proved. Roentgen-ray examinations of the sella region did not show conclusive changes. No anomaly of osseous development was found. Sugar-tolerance tests did not indicate pituitary disease. Basal metabolism was below normal in three of the children. Both parents and children gave negative Wassermann reactions. The thyroid glands were palpable and within ordinary limits of size and consistency. There was no lymphadenopathy, and no history of rickets. Family history of marked adiposity, visual defect, polydactylism, deafness or idiocy could not be obtained. The four unaffected children seemed entirely normal.

Bell's Palsy.—Dabney sees a definite connection of infection, or at least its presence in cases of Bell's paralysis, as well as the existence of a nervous diathesis. He says that every case will show some focus of infection, whether it be in teeth, tonsils, nasal accessory sinus or some other place and that such infection is the cause of every case of so-called Bell's palsy.

Pathology of Fatal Measles.—In eleven fatal cases of measles, Denton performed a necropsy; in eight cases death was due to bronchopneumonia, differing in no important particular from the bronchopneumonia often observed after measles. In three cases death occurred so soon that bronchopneumonia of any important extent had not yet developed. From observation of the patients, from the circumstances under which they died, and from the pathologic changes found, it is believed that the deaths were due to uncomplicated measles and that the lesions found are the lesions of the disease.

Blood Regeneration in Anemia.—The observations made by Janes confirm the findings of others that iron and arsenic preparations have a negative effect on blood regeneration and the correction of anemia. Individuals suffering from secondary anemia due to acute or chronic disease regenerate hemoglobin and red blood cells more rapidly, more effectively, more completely and within a shorter period of time by periodic blood transfusion than by receiving inorganic iron or arsenic preparations. Iron and arsenic preparations exercise practically no beneficial effect in correcting secondary anemias.

American Journal of Physiology, Baltimore

72: 241-385 (April 1) 1925

Influence of Exercise on Muscle Tonus Exhibited by Knee-Jerk. L. T. Brown, Urbana, Ill.—p. 241.
*Influence of Glands with Internal Secretions on Respiratory Exchange. VIII. Effect of Feeding Emulsions of Interrenal Gland to Rabbits. D. Marine, E. J. Baumann and A. Cipra, New York.—p. 248.
Mode of Transference of Calcium from Shell of Hen's Egg to Embryo During Incubation. G. D. Buckner, J. H. Martin and A. M. Peter, Lexington, Ky.—p. 253.
*Influence of Insulin on Inorganic and Organic Phosphates of Liver. C. F. Cori and H. L. Goltz, Buffalo, N. Y.—p. 256.
Amino-Acids in Nutrition. IX. Rôle of Alanine and Indol in Synthesis of Tryptophane by Animal Organism. B. Sure, Fayetteville, Ark.—p. 260.
*Maximum of Human Power and Its Fuel. Y. Henderson and H. W. Haggard, New Haven, Conn.—p. 264.
*Activity in Endocrine Glands. XV. Pseudaffective Medulliadrenal Secretion. W. B. Cannon and S. W. Britton, Boston.—p. 283.
*Id. XVI. Rôle of Suprarenal Medulla in Pseudaffective Hyperglycemia. E. Bubatao and W. B. Cannon, Boston.—p. 295.
Comparative Effects of Epinephrin Infusions on Blood Pressure and Gastro-Intestinal Motility. R. R. Durant, Columbus, Ohio.—p. 314.
Effect of Obstruction of Hepatic Veins on Systemic Circulation. J. P. Simonds and W. W. Brandes, Chicago.—p. 320.
Vigor. II. Effect of Castration on Voluntary Activity. R. G. Hoskins, Columbus, Ohio.—p. 324.
*Presence of Secretin in Intestinal Juice. G. W. Volborth, Petrograd.—p. 331.
*Epilepsy. II. Occurrence of Clonic Convulsive Seizures in Animals Deprived of Cerebral Motor Cortex. F. H. Pike and C. A. Elsberg, New York.—p. 337.
Deceptive Effects of Extracts of Suprarenal Cortex. Cardiac Effect Produced by Potassium Content; Intestinal Effects Due to Epinephrin and Choline. O. W. Barlow and T. Sollmann, Cleveland.—p. 343.
Action of Acids on Cell Division with Reference to Permeability to Anions. H. W. Smith, New York.—p. 347.
Effects of Cerebral Destruction on Sexual Behavioor of Rabbits. II. Frontal and Parietal Regions. C. P. Stone, San Francisco.—p. 372.

Effect of Feeding Interrenal Glands.—Marine and his associates have observed a decrease in heat production in eleven of eighteen rabbits following the oral administration of glycerol emulsions of fresh ox interrenal glands. This fall in heat production usually begins in from five to seven days after the feeding has been started and persists in the majority of cases from four to eight days after the feeding is stopped. It is believed these results represent only a glimpse of what may be obtained when the metabolism-depressing substance is sufficiently isolated and concentrated to be introduced into animals parenterally.

Influence of Insulin on Liver Phosphates.—The decrease in the free sugar of the liver, observed with great regularity during the action of insulin, Cori and Goltz assert is not due to the formation of a hexose-phosphoric acid complex in this organ.

Human Power and Its Fuel.—The most significant result of the observations made by Henderson and Haggard on the Yale crew is the conclusive evidence that in whatever proportion fat and sugar are being burned during rest just before exercise, they are burned in nearly the same proportion to produce the energy for doing work or for the recovery process in the muscles. A man can even make an intense exertion, although rather disadvantageously, on a combustion almost entirely of fat from his own body. The advantage of increasing the proportion of sugar is pointed out.

Pseudaffective Medullisuprarenal Secretion.—A preparation is described by Cannon and Britton in which many of the physiologic accompaniments of great emotional excitement can be produced in an acute experiment, without anesthesia, and thus can be readily studied for hours. The denervated heart in this preparation has rates averaging (in fifteen experiments) 222 beats per minute during quiet, and 252 beats per minute during activity. If the suprarenal glands are removed, the rate of the denervated heart averages 156 beats per minute, and is not increased to a noteworthy degree (not more than from four to 8 beats per minute) during activity. The authors draw the inference that associated with physiologic signs of emotional excitement in the pseudaffective state there is greatly increased secretion of adrenin from the suprarenal medulla.

Rôle of Suprarenal Medulla in Pseudaffective Hyperglycemia.—The relation of the suprarenal medulla to hyperglycemia is discussed by Bulatao and Cannon and the weak evidence and the erroneous logic leading to the conclusion that it plays no important rôle, are pointed out. Also the claim that there is pituitary involvement in decerebrate hyperglycemia is questioned, and reasons are advanced for discrediting that claim.

Secretin in Intestinal Juice.—Volborth says that intestinal juice collected from Thiry-Vella fistulas always contains secretin in its sediment. From other digestive juices—saliva, bile and pancreatic juice—no secretin was obtainable. In the gastric juice both of the fundus and the pyloric part a small quantity of secretin is always to be found.

Experimental Epilepsy.—The experiments reported on by Pike and Elsberg show that both tonic and clonic convulsions of the limbs can be produced in cats by absinthe after the excision of one or even of both motor areas, if an interval sufficient for the return of good locomotor reactions is allowed to elapse after the experimental operation. When only one motor area has been destroyed, there may be more tonic extensor spasm on the side which has been deprived of cortical influences, and slight extensor rigidity may be noted for a short period after the convulsive phenomena have ceased. The greater susceptibility of the uninjured hemisphere to absinthe is shown by the rolling of the animal to the side of the uninjured hemisphere during the absinthe convulsions. The motor cortex is unnecessary for those motor stimuli which produce the recurrent muscular contractions that occur in a typical convulsive attack due to absinthe.

American Journal of Psychiatry, Baltimore

4: 407-582 (Jan.) 1925

Psychoneuroses; Problem in Reeducation. A. F. Riggs and W. B. Terhune.—p. 407.
Problem of Psychoneuroses. E. E. Mayer, Pittsburgh.—p. 419.
Mechanism of Psychoneuroses. T. A. Williams, Washington, D. C.—p. 431.
Immigration and Problem of Alien Insane. S. L. Dawes, New York.—p. 449.
Problems of Personality of School Children and Responsibility of Community for Dealing with Them. C. M. Campbell.—p. 471.
Reeducation of Psychoneurotic Girl. J. Taft, Philadelphia.—p. 477.
Emotional Problems Seen in Superior Child. M. E. Kenworthy, New York.—p. 489.
Childhood Inadequacy in Relation to Internal Glandular System. W. Timme.—p. 499.
Resistant Behavior of Children. D. M. Levy.—p. 503.
*One Hundred and Two Ventricular Fluids in Cases of Brain Tumor. B. J. Alpers, Philadelphia.—p. 509.
Dr. Lundholm on "Creative Imagination." M. Prince.—p. 521.
Mental Hospital in "Fabulous Forties." E. D. Bond, Philadelphia.—p. 527.
Social Significance of Huntington's Chorea. E. M. Hughes, Kalamazoo, Mich.—p. 537.

Examination of Ventricular Fluid in Brain Tumor.—In 102 determinations on ventricular fluids Alpers was able to make a diagnosis of brain tumor from the laboratory findings alone in forty-six instances, or in 45 per cent. of the cases. In the other 55 per cent. of the cases no diagnosis of tumor was made from the laboratory findings. Of the forty-six cases in which a diagnosis of tumor was made, this diagnosis was not verified in only five instances; no tumor being found on operation. In the cases in which a diagnosis of brain tumor was made from the serologic findings, this diagnosis was based in practically every instance on the colloidal gold curve. In one case in which the colloidal gold test was negative, a positive diagnosis of brain tumor was made on the basis of a high cell count and a high total protein content in the fluid. In some cases the reduction in the test was very slight, and in some instances it was quite definite. The

region in which the reduction occurred, however, was by no means uniform, and did not occur in the zone usually considered to be the tumor zone—from about the fourth to the eighth dilutions—with any degree of uniformity. In fact, the number of cases in which the reduction took place in this particular zone were very few. Most of the cases showed a reduction in the syphilitic or tabetic zones, that is, in the first four or five dilutions, or in the third to the sixth or seventh dilutions. Alpers concludes, therefore, that there was no definite curve which was indicative of brain tumor, and no zone which was particularly susceptible to reduction in cases of tumor, but that in a certain number of cases definite reduction of the gold solution results, and from this a diagnosis of brain tumor may be possible.

American Journal of Syphilis, St. Louis

9: 213-412 (April) 1925

*Relative Absorption and Therapeutic Efficiency of Some Bismuth Preparations. L. G. Beinhauer and F. M. Jacob, Pittsburgh.—p. 213.
Generalized Cutaneous Syphilis: Clinical Differentiation. H. Goodman, New York.—p. 225.
Management of Accidents Occurring in Treatment of Syphilis. I. C. Sutton, Hollywood, Calif.—p. 248.
*Clinical and Biochemical Study of Neurosyphilis. L. H. Cornwall and C. N. Myers, New York.—p. 256.
*Acute Purpura Hemorrhagica as Complication in Treatment of Syphilis. P. A. O'Leary and H. M. Conner, Rochester, Minn.—p. 262.
*Etiology and Management of Antenatal Syphilis. A. R. Fraser and R. L. Impey, Cape Town, S. Africa.—p. 274.
*Nonspecificity of Luetin Test. D. C. Smith and R. D. Gill, Charlottesville, Va.—p. 292.
Spontaneous Precipitation Test for Cerebrospinal Syphilis. A. Khan, Brooklyn.
Standardized Method of Preparing Colloidal Gold Solution. M. J. Breuer, Lincoln, Neb.—p. 307.
*Unusual Divergence in Results Obtained with Plain and Cholesterinized Antigens in Complement Fixation Test for Syphilis. R. Gilbert and V. Langworthy, Albany, N. Y.—p. 310.
*Present Status of Kolmer's Complement Fixation Test for Syphilis as Established by Critical Comparison with Numerous Other Methods. R. A. Kilduffe, Atlantic City, N. J.—p. 318.
Comparison of Four Hour and Overnight (15 Hour) Primary Ice Box Incubation in 1,200 Wassermann Tests with Clinical Analysis of Cases. B. S. Kline, H. S. Applebaum and M. A. Lundagen, Cleveland.—p. 345.
*Kahn Test as Aid in Diagnosis of Syphilis. K. T. Redfield, Roanoke, Va. —p. 354.
Sixteen Hundred and Fifty Routine Wassermann Tests. F. Epplen, Spokane, Wash.—p. 360.

Bismuth Preparations in Syphilis.—Beinhauer and Jacob hold that bismuth is an active antisyphilitic drug. Its effect on clinical manifestations is at least as rapid as that of mercury. Its effect on persistent Wassermann reactions is more marked than that of the usual drugs used. All preparations are painless. With quickly absorbable drugs, rapid toxic effects were noted and with slowly absorbable drugs cumulative action must be kept in mind. The therapeutic efficiency of all preparations studied varied but slightly even though the absorption rate varied greatly.

Arsenic Content of Liver and Spleen After Arsphenamin Administration.—The arsenic content of the liver, spleen and kidneys was determined by Cornwall and Myers in a series of rabbits at intervals of from one to ninety-six hours following the intravenous administration of silver arsphenamin. Larger quantities of the drug were fixed by the spleen than by the liver or kidneys. After four days the amount of arsenic in the spleen was twelve times as great as that in the liver.

Toxic Purpura Caused by Sulpharsphenamin.—Two cases of toxic purpura following sulpharsphenamin are reported by O'Leary and Conner. That neo-arsphenamin is the most frequent cause of this complication is also emphasized. The opinions of various authors as to the cause of the hemorrhagic diseases following the intravenous injection of neo-arsphenamin are given. No deductions are made from the accumulated evidence. Purpura of the hemorrhagic type may be noted as a complication of the intramuscular or intravenous use of sulpharsphenamin.

Antenatal Syphilis.—Fraser and Impey stress the fact that antenatal antisyphilitic treatment of the pregnant woman should result in the birth of a healthy infant, and that if kept under observation, and, if necessary, treated, the infant should develop into healthy adolescence. The problem of antenatal syphilis thus resolves itself into an unalterable dogma that every syphilitic expectant mother must be given the advantage of preventive treatment in view of the possible death or infection of her child in utero.

Nonspecificity of Luetin Test.—Smith and Gill state emphatically that the luetin test is not specific for syphilis, hence the reaction is not a reliable diagnostic procedure.

Divergence of Complement Fixation Reactions.—Gilbert and Langworthy report eleven cases in which the blood serum gave a marked reaction with plain alcoholic antigen but no reaction with cholesterinized antigen. In only four of these cases had a diagnosis of syphilis been made.

Kolmer's Complement Fixation Tests.—Kilduffe states that a critical comparison of Kolmer's complement fixation test for syphilis in 68,052 tests by numerous workers conclusively demonstrates its specificity, sensitivity, freedom from false positive reactions and anticomplementary reactions, and its general superiority and suitability as a standard test for general adoption.

Kahn Test for Syphilis.—Approximately 29,000 cases in which the Kahn reaction was run in conjunction with the Wassermann test have been reviewed by Redfield. The need for a test possessing fewer sources of error than the Wassermann reaction has been felt for some time, with the need for a test of high specificity. The Kahn reaction seems to fulfill these conditions. In the cases reviewed there were fewer false reactions and the Kahn test has consistently appeared more delicate, especially in early cases, and in cases following treatment.

American Review of Tuberculosis, Baltimore

11: 175-274 (May) 1925

*Chronic Tuberculous Meningitis Simulating Brain Tumor. L. R. Whitaker, Boston.—p. 175.
*Tuberculous Meningitis in Children. B. S. Herben and M. A. Asserson, New York.—p. 184.
*Experimental Tuberculous Meningitis; Superinfection of Meninges in Rabbits. W. B. Soper and M. Dworski, Saranac Lake, New York. —p. 200.
*Influence of Hypercholesterolinemia on Experimental Tuberculosis of Rabbit. R. H. Jaffe and S. A. Levinson, Chicago.—p. 217.
Experimental Tuberculosis in Rats on Varied Diets. Fat and Vitamin Factors. L. B. Lange, Baltimore.—p. 241.
*Virulence of Saranac Laboratory R1 Strain of Tubercle Bacilli. G. B. Webb, C. T. Ryder and C. H. Boissevain, Colorado Springs, Colo. —p. 247.
*Calcium Content of Blood of Normal and Tuberculous Subjects. P. B. Matz, Legion, Texas.—p. 250.

Chronic Tuberculous Meningitis Simulating Brain Tumor.—The case reported by Whitaker is one of tuberculous meningitis running a mild course of sixteen weeks' duration, with symptoms very closely resembling those of tumor at the left cerebellopontile angle. At operation a small mass of tissue removed from the cerebellum at the left cerebellopontile angle showed miliary tubercles of recent origin. Necropsy showed a generalized miliary tuberculosis, with small sclerosed tubercles scattered throughout the pia mater and brain substance, and several small hemorrhages in the white matter at the base of the brain, the origin of which is unexplained, but which, judging from the perivascular location of many tubercles, may have been due to erosion through vessel walls.

Tuberculous Meningitis in Children.—Herben and Asserson made a very careful analysis of all the circumstances and facts connected with a series of 135 cases of tuberculous meningitis in children. In almost all of these cases the cause of the disease was the human type of tubercle bacillus derived through the child's contact with persons suffering from active tuberculosis. This form of infection is most prevalent in the least sanitary and most congested districts, and tenement houses present a most formidable aspect among etiologic factors. The evidence is predominantly against milk infection as a cause of tuberculous meningitis in New York City. Otitis media and acute infectious diseases, especially measles, pneumonia and whooping cough in children in contact with active tuberculosis, carry a peculiar menace. About 9 per cent. of these 135 cases were preceded by tonsillectomy, unassociated with any other disease. Sex is not an important factor, males being only slightly in preponderance. The highest mortality from tuberculous meningitis occurred in young children, the greatest number of cases in a single age

period developing in children from 1 to 2 years of age. In terms of absolute numbers only, outside of the American stock, there was more tuberculous meningitis among the Italians than in other racial groups. While this study verifies the accepted view of the great prevalence of tuberculous meningitis in the spring, this disease among the Jewish and Negro races reached its peak in midsummer. In forty-seven specimens of spinal fluid showing tubercle bacilli, the latter were bovine in type in only three instances.

Experimental Tuberculous Meningitis.—The most striking result of the experiments made by Soper and Dworski is the fact that tuberculous infection of the meninges, always regarded as peculiarly and almost uniformly fatal, obeys, in experimental animals at least, the same laws as do the peritoneum, pleura and various organs. The thirty odd authentic cases in the literature of man's recovery from tuberculous meningitis may here find confirmation, and, in so far as animal experimentation may be applied to human beings, it is probable that much more human tuberculous meningitis would recover were it not so often the dominant manifestation of a general miliary disease. Also, the clinically interesting surmise presents itself that the ordinary human case of advanced tuberculosis may well undergo slight infections of the meninges from time to time, enough to cause headache and suspicions of meningitis, but not enough to warrant lumbar puncture, and ultimately adjudged as not being meningitis through the very fact that the animals recovered.

Hypercholesterolemia and Experimental Tuberculosis.—The fact emphasized by Jaffe and Levinson is that the feeding of a large amount of oil, of cholesterol and oil, and of egg yolk does not render animals more resistant to tuberculosis. In spite of gaining weight and of an increase in the fat deposits, the animals that had received the lipoids did develop a pronounced tuberculosis. The value of diets rich in fat in the treatment of tuberculosis has often been discussed.

Virulence of Tubercle Bacilli.—Webb, Ryder and Boissevain call attention to the fact that a strain of tubercle bacilli which has appeared to be of constantly low virulence may in some cases cause progressive fatal tuberculosis. The bacilli recovered from such cases may be more virulent than the original strain, though less so than average strains. The bearing of these facts on any method of vaccination which employs living attenuated bacilli is obvious.

Blood Calcium in Tuberculosis.—Observations, made by Matz on the blood of both normal and tuberculous subjects show that there is very little variation in the calcium content of the serum. Ingestion of a number of diets with a varied calcium content, as well as the ingestion of inorganic calcium salts in both normal and tuberculous subjects, resulted in an increase of the blood calcium concentration. Furthermore, the ingestion of cod liver oil caused a still greater increase of the blood calcium than was obtained after the ingestion of food or calcium salts alone. Inasmuch as the arrest of a tuberculous process is accompanied by a calcification in and around the tubercle, and the calcium is derived from the blood, it would seem that any system of therapeusis in tuberculosis which results in a state of calcium saturation of the blood is conducive to calcification and the healing of tubercle. It is therefore believed that an important feature in the treatment of tuberculosis would be a diet with an excessive calcium content, together with the administration of inorganic calcium salts and cod liver oil. Observations were also made by Matz on the relationship of the coagulation time to the calcium content of the blood, and it was found that the higher the blood calcium content, the shorter the coagulation time. Furthermore, it was noted that the ingestion of inorganic calcium salts resulted in a decrease of the coagulation time. It therefore follows that cases of pulmonary hemorrhage, in which there is an increase of the coagulation time, would be benefited materially by such therapy. Inasmuch as these studies show that the oral administration of calcium salts is followed by a rapid rise of the blood calcium, it would appear that indiscriminate intravenous injections of these salts are unnecessary.

Archives of Internal Medicine, Chicago

35: 537-668 (May 15) 1925

*Effect of Ultraviolet Light, Vaccines, Turpentine, Neo-Arsphenamine and Autoblood Injections on Enzymes of Blood and Skin. J. F. Schamberg and H. Brown, Philadelphia.—p. 537.

Pathologic Changes Occurring in White Rats Raised on Diets Deficient in Vitamin. A. I. A. Manville, Portland, Ore.—p. 549.

Respiratory Organs in Health and Disease. XVIII. Vital Capacity of Lungs in Chronic Fibrous Pleurisy, Healed Empyema and Pulmonary Tuberculosis. J. A. Myers and C. H. Rice, Minneapolis.—p. 557.

*Nephrosis. J. Kaufmann and E. Mason, Montreal.—p. 561.

*Excretion of Organic Acids After Pneumonia. S. W. Clausen, St. Louis. —p. 571.

Alkaline Tide in Achlorhydria. R. S. Hubbard and S. A. Munford, Clifton Springs, N. Y.—p. 576.

Simultaneous Determinations of Gastric Acidity and Alkaline Tide in Urine. R. S. Hubbard and E. G. Allen, Clifton Springs, N. Y.—p. 586.

*Atypical Case of Splenomegaly. I. Treiger, Chicago.—p. 594.

*Mechanism of Reaction of Nonspecific Protein Agents in Treatment of Disease. I. Influence of Various Agents on Temperature and Leukocyte Counts in Normal Persons and in Rabbits. C. Y. Ling, Philadelphia.—p. 598.

Transient Change in Auriculoventricular Condition Following Injection of Histamin. H. Hashimoto, Rochester, Minn.—p. 609.

Measurement of Body Surface in Men and Women. R. Faillie, Paris, France.—p. 626.

Blood Volume. II. Comparison Between Total Blood Volumes Determined by Plasma Volume Methods and by New Corpuscle Volume Method. W. Ashby, Rochester, Minn.—p. 632.

Id. III. Effects of Transfusion. W. Ashby, Rochester, Minn.—p. 641.

*Anatomic Findings in Essential Hypertension. A. M. Fishberg, New York.—p. 650.

Effect of Ultraviolet Light on Blood.—Summarizing their findings, Schamberg and Brown state that injections of vaccines, turpentine and autoblood appear to increase the lipase and protease in the blood, while huge doses of neo-arsphenamin and small doses of distilled water tend to decrease them. Ultraviolet light depresses the lipase and stimulates the protease.

Nature of Nephrosis.—Kaufmann and Mason believe that nephrosis, as applied to the kidneys, is an early manifestation of a general systemic cellular degenerative process of unknown origin. The evidence indicates that the true nephrotic kidney progresses into the secondary contracted type as a result of an organizing process of the degenerated cells, and not as a primary inflammatory entity. The pathologic findings, in the different cases, vary according to the stage in the disease at which death occurs.

Excretion of Organic Acids After Pneumonia.—Clausen found in ten cases examined that large quantities of organic acids are excreted in the urine after the crisis in pneumonia. The period of maximum excretion corresponds to the period of resolution. The larger part of the organic acids excreted during resolution in pneumonia is insoluble in ether.

Atypical Case of Splenomegaly.—A woman, aged 60, who had had typhoid fever at 10 years, and eclampsia at 31, nineteen years ago received a diagnosis of enlarged spleen. The findings elicited by Treiger were a greatly enlarged spleen and liver. The blood findings were anemia and leukopenia until a few months ago, when leukocytosis, with myeloid changes, appeared. The course of the disease was divided into the three stages, splenic, hepatic and myeloid; the first stage lasted over a period of twenty years, the second over a period of a few years, and the last has been in evidence for nine months.

Reaction of Nonspecific Protein Agents.—All the agents used by Ling, including distilled water, autoserum, horse serum, certified milk, market milk, crotalin, peptone and typhoid vaccine, raised the temperature in normal persons or rabbits from 0.5 to 2.4 F., sometime within or about four hours after administration. The most decided rise is produced by typhoid vaccine, peptone, market milk and autoserum, named in the order of their effectiveness.

Anatomic Findings in Hypertension.—In seventy-two cases of essential hypertension coming to necropsy, lesions of the terminal arterioles (arteriolosclerosis) were invariably present. In every instance, the minute arterioles of the kidney (vasa afferentia and interlobulares) were affected. The terminal arterioles of the skin, skeletal muscles, myocardium, lungs, gastro-intestinal tract and thyroid were very rarely involved and then to only an insignificant extent. The view

that hypertension is due to the statically increased resistance offered by organic lesions of the arterioles, Fishberg says is untenable. A true generalized arteriolosclerosis does not exist in association with essential hypertension and, therefore, cannot be the cause of the latter. The anatomic changes in the kidney cannot be reconciled with the theory that essential hypertension is due to a disorder of renal function. Only five of the seventy-two cases had renal insufficiency.

Archives of Otolaryngology, Chicago

1: 473-586 (May) 1925

*Blood Calcium in Undifferentiated Deafness. S. J. Kopetzky and R. Almour, New York.—p. 473.
*Lateral Sinus Thrombosis Without Elevation of Temperature. J. W. Holderman, Chicago.—p. 488.
*Micrococcus Pharyngitidis Siccae; Case of Septicemia. M. A. Blandenhorn and M. K. King, Cleveland.—p. 498.
*Perforation of Faucial Pillars; Case. E. H. Cambell, Philadelphia.—p. 503.
*Direct Blood Stream Infection Through Tonsils. M. Tanaka and S. J. Crowe, Baltimore.—p. 510.
Rabbit Rib in Bronchus of Infant; Bronchoscopy and Recovery. E. J. Patterson, Pittsburgh.—p. 521.
Tests of Hearing of Five Hundred Average Ears by Audiometer No. 2-A. D. W. Drury, Boston.—p. 524.
Lamb's Lung Manikin for Bronchoscopic Study and Practice. M. J. Mandelbaum, New York.—p. 533.
*Abnormal Ear Conditions in Patients with Mental Diseases. G. B. M. Free, Danville, Pa.—p. 582.

Blood Calcium in Undifferentiated Deafness.—Assuming, as a basis for study, that certain generalized diseases, as well as metabolic disturbances, are capable of causing a reduction in hearing, a study of the blood chemistry was undertaken by Kopetzky and Almour, in a consecutive series of cases of deafness with the idea of determining what chemical changes in the blood were associated with the loss of acoustic function. Conversely, there seemed a possibility that it might be possible to correlate certain clinical types of deafness with definite changes in the blood chemistry and so determine accurately the cause of the interference with hearing. Of the twenty patients examined, fourteen showed a diminution in the calcium content of the blood. In ten, a clinical diagnosis of otosclerosis had been made. The authors regard this alteration of the calcium content in blood a strong corroborative evidence of the presence of otosclerosis in a patient who presents a loss of hearing clinically and a history of deafness in one or more blood relatives.

Lateral Sinus Thrombosis Without Fever.—A critical summary made by Holderman shows that of thirty-one cases of afebrile lateral sinus thrombosis, fourteen complicated acute middle ear disease; fourteen, chronic middle ear disease, and three were not designated. Fourteen had sinus abscesses, while seventeen had firm or totally organized thrombi; in eleven, headache was present.

Micrococcus Pharyngitidis Septicemia.—The patient whose case is reported by Blandenhorn and King died of a blood infection by *Micrococcus pharyngitidis-siccae*, and because the disease began with a "cold" and later developed into purulent bronchitis, they assume that the respiratory passages were the portal of entry.

Perforation of Faucial Pillars.—Campbell reports a case of perforation of the right faucial pillar which he believes was of inflammatory rather than of congenital origin. The tonsil beneath this opening was small, embedded, closely bound to the pillars by adhesions and with every appearance of having been actively diseased. It seems very possible that the condition could have been caused by the persistent inflammation of the right side of the throat which the child had had seven years previous to examination.

Blood Stream Infection Through Tonsils.—Reconstruction of an infected tonsil by Tanake and Crowe demonstrates very clearly the distribution of the capillaries in the epithelium and that of the large veins around the crypts. The clinical evidence that many of the general systemic disturbances secondary to chronic tonsillitis are due to the localization of bacteria in the affected area is supported by the following facts: (1) The epithelium that lines the crypt in a normal tonsil has a rich capillary blood supply; the large collecting veins that surround each crypt lie just under the basement membrane. (2) A destruction of this epithelium, in whole or in part, is the most common microscopic finding in chronic tonsillitis.

Ear Disease as Cause of Mental Conditions.—Free urges that diseases of the ear should be considered as a definite etiologic factor in the production of certain types of abnormal mental manifestations. Routine examinations of the ear should be made in all patients with mental disease. Such examinations, in many instances, will reveal conditions which, if removed, will at least render the patient more comfortable, and in some cases will bring about a cessation of the mental symptoms.

Archives of Surgery, Chicago

10: 813-1047 (May) 1925

*Treatment of Infections and Infectious Diseases with Mercurochrome-220 Soluble. H. H. Young, J. H. Hill and W. W. Scott, Baltimore.—p. 813.
Effect of Unit Record System and Improved Organization on Hospital Economy and Efficiency. M. W. Openchowski, New York.—p. 925.
Exhaustion. VIII. Anaphylaxis; Pregnancy. G. W. Crile, Cleveland.—p. 935.
*Hypernephroma and Carcinoma of Kidney: Comparative Study. D. K. Rose, St. Louis.—p. 943.
Separation of Upper Epiphysis of Radius. A. H. Montgomery, Chicago.—p. 961.
*Treatment of Epiphyseal Separation of Lower End of Radius. I. Zadek, New York.—p. 969.
Deposition of Calcium Phosphate and Calcium Carbonate in Bone and in Areas of Calcification. J. C. Watt, Toronto.—p. 983.
*Embolectomy; Case. A. M. Dickinson, Albany, N. Y.—p. 991.
Abnormal Arteriovenous Communications, Acquired and Congenital. II. Origin and Nature of Arteriovenous Aneurysms, Cirsoid Aneurysms and Simple Angiomas. M. R. Reid, Cincinnati.—p. 996.
Twenty-Sixth Report of Progress in Orthopedic Surgery. R. B. Osgood et al, Boston.—p. 1010.

Mercurochrome Treatment of Infections.—Young et al. review the work done that led to the discovery of mercurochrome-220 soluble and summarize 210 cases that are said to present many examples of a therapia sterilisans magna. They believe that these cases justify the final assertion that in mercurochrome-220 soluble, intravenously administered, a really remarkable addition to therapeutics may be claimed. It is a drug, the usage of which in a great variety of septic conditions seems justified.

Hypernephroma and Carcinoma of Kidney.—In twelve pathologic specimens, the most recent removed three years ago, Rose says the mortality resulting from hypernephroma was conspicuously lower than that resulting from carcinoma. Kidney tumors arising from suprarenal rests are much less malignant than those arising from tubular epithelium, and the two types can best be differentiated by their gross appearance and histologic structure, rather than by their location in the kidney, their chemistry or conflicting embryologic arguments.

Treatment of Epiphyseal Separation of Lower End of Radius.—Zadek asserts that palmar flexion (about 100 degrees), is a simple, direct and mechanically efficient method of treatment of epiphyseal separations of the lower end of the radius. This reduction should be made under anesthesia and the attitude maintained by a plaster-of-Paris cast for two and a half or three weeks. The fingers should be left free and the patient should be able to move them readily, though the attitude of palmar flexion makes it impossible for him to make a fist. After the removal of the plaster cast, there is no difficulty in forcing the hand into dorsal flexion.

Embolectomy on Brachial Artery.—Dickinson reports a case of embolism of the right brachial artery in which the embolus was removed surgically. Gangrene of the arm ensued, followed by the death of the patient on the third day after operation apparently from acute dilatation of the heart.

Boston Medical and Surgical Journal

192: 939-986 (May 14) 1925

*Administration of Dochez's Antiscarlatinal Serum (Scarlatinal Antitoxin) Intravenously. C. L. Thenebe, Hartford, Conn.—p. 939.
Convalescence. VIII. Convalescent Work in U. S. Army. J. Bryant, Boston.—p. 943.
*Bronchial Gland Tuberculosis. J. B. Hawes and E. Friedman, Boston.—p. 954.
Chronic Bronchitis. E. O. Otis.—p. 957.
Common Cold. G. B. Rice, Boston.—p. 959.
*Two Unusual Cases of Foreign Body. I. J. Walker.—p. 962.
Distribution of Insulin. E. R. Kelley, Boston.—p. 964.

Dochez Serum in Scarlet Fever.—Observations made by Thenebe confirm the clinical results obtained by F. J. Blake, in that antiscarlatinal serum is a valuable therapeutic agent in the treatment of scarlet fever. He says that the toxemia accompanying scarlet fever can be combated effectually by the administration of serum intravenously in smaller doses than are usually administered intramuscularly. The intravenous administration of serum affords maximum immediate concentration of antitoxin in the blood stream; its use being indicated in the moderate to severely toxic and septicemic types of diseases. It has been used without undesirable and untoward effects and therefore would be a safe procedure. The incidence of complications may be lessened by its administration, more than by any other present method of procedure.

Bronchial Gland Tuberculosis.—Hawes and Friedman believe that there is urgent need of further study as to the effect of acute nontuberculous respiratory tract infections on the hilus glands and tissues from both the clinical and roentgenologic aspects. They are of the opinion that both d'Espine's sign and the Eustace-Smith sign are of comparatively little value; further, they believe that so-called parasternal dullness is a point of no value and that paravertebral or interscapular dullness are of value chiefly in the hands of those very few whose skill in percussion is highly developed. They agree that in the case of children who are actually sick with tuberculosis and are not merely infected contact cases paravertebral dulness may be of real value in diagnosis. The whole subject of the diagnosis of bronchial gland or hilus tuberculosis is still in a stage of doubt and uncertainty. "Signs" at the best are unreliable and roentgen ray evidence at present of little value. Diagnosis should be based on history, exposure, positive Pirquet and constitutional signs and symptoms.

Foreign Bodies in Gastro-Intestinal Tract.—The foreign bodies in Walker's cases were a table fork, a spoon, a sardine can opener, and a crochet needle, the hook of which had been filed away leaving a sharp joint; two small underwear buttons, a brass strongsuit eyelet about the size of a 25 cent piece, and considerable shredded cloth; and a safety razor blade.

California and Western Medicine, San Francisco

23: 561-672 (May) 1925

Beginnings of California's Medical History. G. D. Lyman, San Francisco.—p. 561.
Historical Collection of Lane Medical Library. L. Ophüls, San Francisco.—p. 576.
History of Development of Women in Medicine in California. A. Brown, San Francisco.—p. 579.
Correspondence Relating to Introduction of Vaccination into America. W. C. Alvarez, San Francisco.—p. 582.
Historical Incidents in Development of Operation for Cataract. H. Barkan, San Francisco.—p. 585.
California Pandemic of 1833. E. W. Twitchell, San Francisco.—p. 592.
Democedes of Crotona. W. F. Cheney, San Francisco.—p. 593.
California's Medical Practice Acts. F. F. Gundrum, Sacramento.—p. 595.
"Chiropractic Fountain Head." A. W. Meyer, Stanford University, Calif.—p. 610.

Canadian Medical Association Journal, Montreal

15: 461-580 (May) 1925

Medical Witness. T. G. Mathers, Manitoba.—p. 461.
Cancer Prophylaxis. W. W. Chipman, Montreal.—p. 467.
Periarteritis Nodosa. C. P. Howard, Montreal.—p. 473.
Problem of Fundamental Action of Insulin. J. J. R. Macleod, Toronto.—p. 476.
Colles' Fracture. A. Gibson, Manitoba.—p. 479.
Forty-Five Cases of Anterior Poliomyelitis. F. B. Walsh, Estevan, Sask.—p. 482.
Roentgen-Ray Findings in Primary Carcinoma of Lung. H. M. Tovell, Toronto.—p. 485.
Newer Methods for Determination of Pregnancy. R. Mitchell, Winnipeg.—p. 489.
Pyelitis of Pregnancy; Thirteen Cases. J. C. McClelland, Toronto.—p. 494.
*Extreme Sensitization in Infants to Cow's Milk Protein. F. F. Tisdall and I. H. Erb, Toronto.—p. 497.
Multiple Myelomata; Case. F. H. Mewburn and H. M. Vango, Edmonton, Alta.—p. 502.
Industrial Diseases in Ontario. A. R. Riddell, Toronto.—p. 510.
Industrial Toxications Under Workmen's Compensation Act. W. C. Givens, Toronto.—p. 512.
Use of Lipiodol in Diagnosis of Cord Tumor. C. K. Russel, Montreal.—p. 514.
*Fatal Hemorrhage from Duodenal Ulcer, Associated with Toxic Adenoma of Thyroid. P. G. Silver, Montreal.—p. 517.
Case of Internal Hernia of Purely Pathologic Origin. W. L. Barlow and J. O. Fraser, Montreal.—p. 518.
*Case of Diabetic Coma Treated with Dioxyacetone, with Recovery. I. M. Rabinowitch, Montreal.—p. 520.
Case of Sprue. A. H. Gordon, Montreal.—p. 522.
Tuberculosis in Children. R. R. Struthers.—p. 525.
Artificial Feeding of Normal Infants with Cows' Milk. R. R. Struthers, Montreal.—p. 528.

Extreme Sensitization to Cow's Milk Protein.—Two cases of extreme sensitization to cow's milk protein are reported by Tisdall and Erb. The diagnosis of this condition usually presents little difficulty on account of the striking and unusual symptoms which appear directly after the first administration of cow's milk. The symptoms usually are, refusal of the infant to take cow's milk after a few drops have been swallowed, followed by pain as evidenced by crying, swelling of the skin and mucous membranes wherever touched by the milk, and symptoms of shock as evidenced by rapid shallow breathing and cyanosis. Sometimes a general urticaria of the skin appears. The treatment consists in desensitizing the infant by giving minute doses of cow's milk which are gradually increased until the necessary amount for the nutrition of the child is administered. To accomplish this usually required three or four months' time.

Duodenal Ulcer with Toxic Adenoma of Thyroid.—The first symptom of a duodenal ulcer in the case cited by Silver was a fatal hemorrhage. That the duodenal ulcer in this case could have any direct relation to the thyroid condition, for which the patient sought relief, does not seem probable.

Dioxyacetone for Diabetic Coma.—One hour after administration of dioxyacetone, in Rabinowitch's case there was a decrease in the degree of acidosis. The plasma carbon dioxid combining power was little altered. In spite of the administration of 18 gm. of dioxyacetone during that one hour period, the degree of hyperglycemia had not increased. Clinically, there was practically no change noted. At the end of the second hour, there was very little further change in the excretion of either acid or ammonia. The plasma carbon dioxid showed a definite, though slight increase. The blood sugar had not increased though 24 gm. of dioxyacetone were given during that hour. Clinically the patient appeared to be a little brighter. The respirations were not so labored. The acetone odor of the breath was still marked. Following this period there was a definite, though slight, decrease in the degree of hyperglycemia. The degree of acidosis had gradually decreased. At the end of the twelve hour period the patient was mentally clear and gave an intelligent account of her illness. The respirations were only slightly increased. The patient stated she felt well. The breath still had a slight odor of acetone, and the urine gave a positive ferric chlorid reaction, though of much less intensity. The rate of excretion of sugar had altered only slightly; there was a decrease in spite of the fact that 68 gm. of dioxyacetone were given during the period. Only traces of dioxyacetone were detected in the urine.

Endocrinology, Los Angeles

9: 109-180 (March-April) 1925

Is There an Antagonism Between Male and Female Sex Endocrine Gland? A. Lipschutz, Tartu, Estonia.—p. 109.
*Pathology of Hypophysis. V. Abscess. J. P. Simonds, Chicago.—p. 117.
*Case of Pseudohermaphrodite. G. L. Rohdenburg, New York.—p. 122.
*Effect of Feeding Fowls on Thyroid. B. Zavadovsky, Moscow.—p. 125.
*Incidence of Goiter Among School Children. D. C. Hall, C. M. Hofrichter and G. J. Mohr, Seattle, Wash.—p. 137.
*Effect of Pituitary Preparations on Nitrogen Metabolism. G. P. Grabfield and A. M. Prentiss, Boston.—p. 144.

Abscess of Hypophysis.—Seven new cases of abscess of the hypophysis are reported by Simonds and the mechanisms by which the infection reaches this gland are described. Six of these abscesses were in the anterior lobe, and one was in the posterior lobe. The etiology of the abscess in one case is not clear. No clinical history was obtainable, and the circumstances under which the necropsy was done made a satisfactory examination of the associated pathologic conditions next to impossible. The remaining six cases illustrate the two distinct ways in which abscess of the hypophysis may

originate, namely, by the lodgement of mycotic or septic emboli, and by extension from a suppurative inflammation of nearby structures.

Pseudohermaphrodite.—Rohdenburg reports the case of an individual with the external genitals resembling the male and the female and with internal genital organs consisting of a bicornate uterus with a septum, and one gonad, and embryonal testis, a portion of the vas deferens and a spermatic cord.

Effect of Feeding Thyroid Preparations.—Thyroid preparations were administered by Zavadovsky to about sixty fowls. The dosages ranged from minimal to fatal. The symptoms of hyperthyroidism demonstrated were increased excitability, polyphagia, polydipsia and nervous disturbances which varied with the doses. The neuropathologic disturbances included incoordination, convulsions and general stupidity. An effect specific to fowls was observed in the plumage. Larger doses caused a marked loss of feathers. These were replaced by others which were completely colorless or white in varying degrees, depending on dosage. It is concluded that the thyroid gland plays a specific rôle in the regulation of the growth and moulting of feathers and in their pigmentation.

Incidence of Goiter Among School Children.—The findings presented by Hall, Hofrichter and Mohr indicate much earlier age incidence of goiter among school children than has heretofore been noted. The relative incidence among boys as contrasted with girls is likewise much greater than earlier reported. Of 1,654 boys examined, 35.5 per cent. had goiter and 43.4 per cent. of 1,506 girls had goiter.

Effect of Pituitary Preparations on Nitrogen Metabolism.—No effect on the urinary nitrogen excretion or nonprotein nitrogen of the blood was observed by Grabfield and Prentiss as a result of the administration of either pituitary extract (intramuscularly), dried anterior lobe, dried posterior lobe or dried whole gland pituitary (by mouth) to patients on a constant diet.

Iowa State Medical Society Journal, Des Moines

15: 165-224 (April 10) 1925

Modern Treatment of Diphtheria; Method of Preparing Antitoxin. W. L. Bierring, Iowa City.—p. 171.
Medicine and Fundamental Sciences. C. K. Edmunds, Baltimore.—p. 175.
Standardization of Treatment of Fractures of Skull. C. S. Krause, Cedar Rapids.—p. 181.
Fractures of Upper Extremities. P. A. Bendixen, Davenport.—p. 183.
Fractures of Lower Extremities. C. E. Ruth, Des Moines.—p. 186.
Angiomas of Throat. W. J. Foster, Cedar Rapids.—p. 192.
Prevention of Postoperative Intestinal Incompetence. L. Long, Oklahoma City.—p. 195.
Prophylactic Blood Transfusion as Routine Measure in Poor Operative Risks. G. G. Ward, New York.—p. 198.
What General Practitioner Should Know of Radium in Gynecology. G. Gellhorn, St. Louis.—p. 200.
Use of Radium from Surgical Standpoint. P. A. White, Davenport.—p. 202.

Journal of Bacteriology, Baltimore

10: 197-313 (May) 1925

Vibrio Cholerae. I. Fermentation of Carbohydrates and Polyatomic Alcohols by Vibrio Cholerae. K. Nobechi, Tokyo, Japan.—p. 197.
Reducing Properties of Micro-Organisms; Selenium Compounds. V. E. Levine, Omaha.—p. 217.
Certain Characteristics of Clostridium Chauvei and Clostridium Edematis. J. P. Scott, Kansas City, Mo.—p. 265.

Journal of Comparative Psychology, Baltimore

5: 109-202 (April) 1925

Color Preferences of One Thousand and Six Negroes. F. M. Mercer, Austin, Texas.—p. 109.
Visual Perception and Retinal Mosaic. II. Influence of Eye Movements on Displacement Threshold. H. L. Averill and F. W. Weynouth, Stanford University, Calif.—p. 147.
Copulatory Ability in Male Albino Rat Incurred by Defective Diets. II. Qualitative Deficiency. C. P. Stone, Stanford University, Calif.—p. 177.

Kansas Medical Society Journal, Topeka

25: 131-165 (May) 1925

Restoration of Pancreas. C. F. Menninger, Topeka.—p. 131.
Syphilis and Necessity for Its Control. E. G. Brown, Topeka.—p. 136.
Significance of Colloidal Properties of Gelatin in Special Dietaries. T. P. Downey, Pittsburgh.—p. 142.

Maine Medical Association Journal, Portland

16: 81-99 (May) 1925

Drug Therapy in Cardiovascular Diseases. P. D. White, Boston.—p. 81.
Urinary Bleeding. H. Jameson, Rockland, Me.—p. 84.
Heart Cases with Regard to Prognosis. D. Forest Weeks, Portland.—p. 89.

Medical Journal and Record, New York

121: 521-588 (May 6) 1925

*Intracranial Hemorrhage in New-Born from Obstetrician's Viewpoint. M. L. Brandt, New York.—p. 521.
Correct Conception of Thoracic Empyema and Its Rational Physiologic Treatment. A. L. Soresi, New York.—p. 524.
Effusions Into Knee Joint and Housemaid's Knee. E. H. Smith, San Francisco.—p. 528.
Vasomotor Rhinitis; Eight Cases Reacting to Orris Root. E. M. Robinson, Brooklyn.—p. 529.
Purulent Pericarditis in Childhood. A. C. Wood and W. N. Bradley, Philadelphia.—p. 531.
Osgood-Schlatter Disease. J. Grossman, New York.—p. 534.
Bleeding Nipple. P. Tapie, Bordeaux, France.—p. 537.
Diagnosis of Acute Conditions of Brain. J. V. Haberman, New York.—p. 538.
Therapeutic Possibilities of Small Doses of Roentgen Rays. C. F. Stokes, New York.—p. 543.
Treatment of Pneumonia by Diathermy. W. B. Snow, New York.—p. 547.
Electrotherapeutics in Urology. V. C. Pedersen, New York.—p. 551.
Electrotherapy in Paralysis Following Peripheral Nerve Lesions and Poliomyelitis. R. Kovacs, New York.—p. 557.
Tonsil and Roentgen Ray. M. V. Leof, Philadelphia.—p. 561.
Hepatic and Cardiac Syndrome. W. Martin, Atlantic City, N. J.—p. 563.
Tryparsamide in Neurosyphilis. H. P. Hyder, Washington, D. C.—p. 567.

Intracranial Hemorrhage in New-Born.—During 1924 there were born in the Bronx 15,160 babies. Of this number, 629, or 4.1 per cent., were stillborn and 469, or 3.1 per cent., died during the first month of life. Brandt says that intracranial lesions, mild and severe, develop in the course of both normal and abnormal labors. Evidence of such injuries can be discovered at necropsy in approximately one half of all infants stillborn or dying within the first few days of life. But only in half of these cases was this injury the cause of death. In the other half traumatic lesions, chiefly tentorial lacerations without or with slight hemorrhage, represent but incidental findings.

Medicine, Baltimore

4: 1-250 (Feb.-May) 1925

Lead Poisoning. J. C. Aub, L. T. Fairhall, A. S. Minot and P. Reznikoff.—p. 1.

Texas State Journal of Medicine, Fort Worth

20: 637-702 (April) 1925

Mysticism and Fatalism in Treatment of Heart Disease. K. H. Beall, Fort Worth.—p. 645.
Surgical Goiters. G. D. Mahon, Dallas.—p. 648.
Removal of Metallic Foreign Bodies from Lung and from Esophagus; Two Cases. G. S. McReynolds, Temple.—p. 650.
Alternating Squint. E. L. Goar and W. Ralston, Houston.—p. 651.
Bronchoscopy and Esophagoscopy in Relation to General Practice. S. Israel, Houston.—p. 654.
Multiple Serositis; Antemortem Diagnostic Procedure. J. R. Lehmann, Dallas.—p. 655.
Cesarean Section; Indications. M. L. Wilbanks, Greenville.—p. 658.
Torsion of Great Omentum; Case. J. W. Nixon, Jr., San Antonio.—p. 659.

21: 1-40 (May) 1925

Intracranial Hemorrhage of New-Born. W. L. Allison, Fort Worth.—p. 8.
Intracranial Complications of Ear and Accessory Nasal Sinus Affections. W. O. Ott, Fort Worth.—p. 12.
Ligature of Common Iliac Artery: Two Cases. J. E. Thompson, Galveston.—p. 15.
Combined Methods of Treating Malignancies. D. Jackson, San Antonio.—p. 22.
*Mercurochrome in Surgical Practice. J. S. Tomkies, Dallas.—p. 24.
*Pernicious Anemia. J. G. Burns, Cuero and C. F. Dixon, Rochester, Minn.—p. 26.

Mercurochrome in Pyelitis and Salpingitis.—Tomkies has treated about fifty cases with mercurochrome and has obtained the best results in cases of acute pyelitis, salpingitis and bilateral nephrolithiasis with infection.

Pernicious Anemia.—Burn and Dixon advocate intestinal drainage in the treatment of pernicious anemia. Because drainage above the terminal ileum is incompatible with prolonged life; because they have found evidence of cecal stasis in some patients observed, and because of its technical simplicity, they decided that drainage should be instituted in the region of the ileocecal coil. Another reason for choosing this site was on account of the high absorbative power of the right half of the colon. Ileostomy has been performed in at least seven cases. The results have been encouraging.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 953-994 (May 23) 1925

Importance of Exploratory Incision in Cancer of Breast. D. C. L. Fitzwilliams.—p. 953.
*Causation and Prevention of Rickets. A. Webster and L. Hill.—p. 956.
Two Diseases Due to Fashion in Clothing: Chlorosis and Chronic Erythema of Legs. F. P. Weber.—p. 960.
Treatment of Hay-Fever. F. Coke.—p. 962.
*Rectal Injection of Ether in Whooping Cough. C. Elgood.—p. 963.
Hemoglobinuria Following Malarial Treatment of Quaternary Syphilis. G. de M. Rudolf.—p. 964.
Roentgen Rays in Diagnosis of Organic Diseases of Colon. A. F. Hurst.—p. 965.
Parkinsonism Together with "Apache Type" in Lethargic Encephalitis. A. Hancock.—p. 966.
Case of Hydatidiform Mole. N. Wilson.—p. 966.
Congenital Familial Jaundice. J. K. Dunlop.—p. 966.
Melena Neonatorum Treated by Injection of Paternal Blood: Recovery. J. C. Morrison.—p. 967.
Mitral Stenosis in Pregnancy: Cesarean Section. J. H. Tonking.—p. 967.
Retropharyngeal Abscess: Secondary Hemorrhage. P. K. Liang, C. H. Lei and P. T. Liang.—p. 967.

Cause of Rickets.—Webster and Hill present evidence which strongly suggests that the primary cause of rickets is a low calcium and inorganic phosphate level in the circulating blood, and that this is due to defective absorption from the intestinal canal. Experiments on rats yielded results which may be summarized as follows: Confinement per se was not responsible for the development of the rickets. Exercise and open air but absence of direct sunlight have no specific antirachitic effect on young rats. A minimum exposure of two hours to bright sun or sky-shine five days a week was necessary to protect rats from rickets under the severe experimental conditions adopted in this research. Ultraviolet light is specific in its antirachitic effect. Rickets is not produced in rats fed on a normal diet and subjected to a high temperature for twenty-eight days. Providing the diet is adequate, conditions simulating the tropics at their worst, but without any ultraviolet light, will not give rise to rickets in young rats. Provided an animal is supplied with food just sufficient to maintain life and a little growth and a bare minimum of the bone forming elements calcium and phosphorus, then, if ultraviolet light be supplied in adequate amount, rickets will not develop however unfavorable the animal's environment may be. Sulphur fails to prevent rickets as often as it succeeds. Magnesium sulphate, arsenic and thymol proved to be useless as antirachitic agents. The authors cite data that strongly support the view that the antirachitic body in cod liver oil and radiant energy in the form of ultraviolet light both act in the same way in preventing rickets, and that this mode of action is a facilitation of absorption of calcium and phosphorus from the intestine into the blood stream.

Rectal Injection of Ether in Whooping Cough.—Elgood says that drugs still hold their place in the treatment of whooping cough. Of these belladonna seems to be the most useful. Ether will check the disease completely in 25 per cent., fail completely in 25 per cent., and be followed by considerable improvement in 50 per cent. Ether neither causes nor prevents complicating bronchitis; bronchitis already present is not a contraindication to its use. The method of administration seems to be of no importance, provided the dose is large enough. Elgood injects from 5 to 10 minims intragluteally or 30 minims in olive oil by enema.

1: 995-1026 (May 30) 1925

Fashions and Fads in Medicine. R. Hutchison.—p. 995.
*Effect of Pituitrin and Insulin on Blood Sugar. R. D. Lawrence and R. F. L. Hewlett.—p. 998.
Treatment of Convergent Concomitant Squint. A. F. Fergus.—p. 1002.
Hypoglycemia: Two Cases. H. S. Pemberton.—p. 1004.
Congenital Cystic Disease of Lungs. S. Smith.—p. 1005.
*Pneumococcal Wound Infection: Two Cases. B. Muir.—p. 1005.
Perforation of Jejunum During an Attack of Lobar Pneumonia: Laparotomy: Recovery. R. Maingot.—p. 1006.
Fracture of Both Patellae by Muscular Action. T. Twistington Higgins.—p. 1006.

Effect of Pituitary Extract and Insulin on Blood Sugar.—Lawrence and Hewlett found that subcutaneous injection of therapeutic doses of 1 c.c. of posterior lobe extract have no appreciable or constant effect on blood sugar concentration in normal and diabetic persons. These doses markedly antagonize the effect of insulin on blood sugar in both normal and diabetic persons. Experiments with ergotamin show that this antagonism is produced by the mobilization of glucose by pituitary extract. The insulin tolerance of normal persons in the fasting condition is from 15 to 20 units. Much more can be tolerated when insulin is balanced with food. Curious symptoms caused by therapeutic doses of pituitary extract in normal persons are described. Blood sugar experiments in a case of diabetes insipidus are described and their significance is discussed. It is suggested that the pituitary gland, like the thyroid, is one of the most important factors in producing a normal balance between anabolism and catabolism and does so primarily by its effect on glycogenic function and carbohydrate metabolism.

Pneumococcal Wound Infection.—Muir asserts that he could not find a record in the literature of a similar case. His two cases were both "traversing" bullet wounds, and in both the primary infection appeared to be pneumococcal.

Calcutta Medical Journal

21: 363-410 (March) 1925

Complement Fixation Test. B. N. C. Roy.—p. 363.
Vaccine Therapy. N. Banerji.—p. 369.
Electric Ionization in Dermatology. A. Gupta.—p. 378.
Vitamins. A. Roy.—p. 383.

Indian Medical Gazette, Calcutta

60: 197-246 (May) 1925

*Giant Urticaria. H. W. Acton.—p. 197.
Antidiabetic Properties of Cephalandra Indica (Telakucha). R. N. Chopra and J. P. Bose.—p. 201.
Operative Treatment of Intestinal Stasis. H. Halliday.—p. 202.
*Value of Aldehyde Test in Diagnosis of Kala-Azar. P. Ganguli.—p. 204.
*Treatment of Kala-Azar with Urea Stibamine in Medical Outpatient Department of Medical College Hospital, Calcutta. N. C. Kapur.—p. 206.
Intravenous Anesthesia in Surgical Practice. J. P. Arland.—p. 210.
*Quinin Plus Alkalis in Treatment of Malaria. K. V. Raju.—p. 212.
Choroidal Hemorrhage Following Cataract Extraction. M. M. Cruickshank.—p. 213.

Giant Urticaria.—In the treatment of this condition, Acton has been giving 2 minims of a 1:1,000 solution of epinephria hydrochlorid intramuscularly every day for four or five days, then followed by suprarenalin, 1 gm., and extract thyroideum siccum 0.25 gm. twice a day on an empty stomach for three weeks. This treatment usually enables the patient to return with safety to the particular food to which he was sensitive before treatment. If there is general sensitiveness, it is as well to examine the stools for *E. histolytica* cysts and to examine the size of the liver. Often emetin will cure the amebic infection of the bowel, and at the same time prevent the giant urticaria.

Aldehyd Test in Kala-Azar.—Ganguli holds with those who assert that the value of the aldehyd test is a purely negative one. There was not a single case of kala-azar with a clear history of more than five months' duration, in which spleen puncture showed Leishman-Donovan bodies, that the aldehyde test was negative. Eight suspected cases with clinical symptoms of kala-azar and a kala-azar blood picture were thus investigated.

Urea Stibamine in Kala-Azar.—Kapur has had good results from the use of urea stibamine in cases of kala-azar. The course of treatment for bringing about cure in kala-azar is remarkably short. In some of the cases cure took place in only seven days. In cases of the antimonyl tartrates the course of treatment frequently extends over more than three months. The most striking results with urea stibamine are: (*a*) rapid disappearance of the splenic enlargement; (*b*) rapid subsidence of the fever; (*c*) early disappearance of the leukopenia, and (*d*) the short treatment required for a complete cure.

Quinin and Alkalis in Malaria.—The routine treatment of "fever" at the hospital where Raju works is, first, to administer a saline aperient, and then await the onset of a rigor in order to take blood films for examination, if the patient has given a history of rigors. The treatment is carried out

in accordance with the instructions given by Major Sinton, using his alkaline mixture (for an adult: sodium bicarbonate, 60 gm.; sodium citrate, 40 gm., and water to 1 ounce) and his quinin mixture (for an adult: quinin sulphate, 10 gm.; citric acid, 30 gm.; magnesium sulphate, 60 gm., with water to 1 ounce). On the first day four doses of the alkaline mixture, and two of the quinin mixture are given, the latter on each occasion fifteen minutes after the alkaline mixture; for the next four days, three doses a day of the alkaline mixture, followed after a fifteen minutes interval by three doses of the quinin mixture; and for the next two days, two doses of the alkaline mixture, followed after a fifteen minutes interval by two doses of the quinin mixture; the patient taking in all during the week 180 grains quinin sulphate in solution.

Journal of Physiology, London

60: 1-108 (May 21) 1925

Effects of Different Salts on Heat Production of Muscle. E. Sereni.—p. 1.
Influence of Carbon Dioxid Tension in Inspired Air on Carbon Dioxid Tension in Tissues. J. A. Campbell.—p. 20.
Relation in Diuresis Between Volume of Urine and Concentration of Diuretic with Influence of Temperature on It. E. J. Conway.—p. 30.
*Direct Action of Insulin on Fat Metabolism. H. S. Raper and E. C. Smith.—p. 41.
*Hemochromogen Relation of Protein to Properties of Hemoglobin Molecule. M. L. Anson and A. E. Mirsky.—p. 50.
Effect of Pituitrin on Fatty Acid of Liver. R. Coope and E. N. Chamberlain.—p. 69.
*Influence of Spleen in Carbon Monoxid Poisoning. J. Barcroft, C. D. Murray, D. Orahovats, J. Sands and R. Weiss.—p. 79.
*Mechanism of Pancreatic Digestion-Function of Secretin. J. Mellanby.—p. 85.
*Insulin and Pituitrin "Fat Liver." R. Coope.—p. 92.
Maximum Work of Several Muscles of Forearm. J. H. O. Reijs.—p. 95.
Combination of Nitric Oxid with Hemoglobin. M. L. Anson and A. E. Mirsky.—p. 100.
Closed Circuit Heart Lung Preparation. I. Effect of Alterations in Blood Volume. I. de Burgh Daly.—p. 103.

Action of Insulin on Fat Metabolism.—The evidence obtained by Raper and Smith does not support the view that fat synthesis in the liver is associated with insulin hypoglycemia (confirming Dudley and Marrian).

Carbon Dioxid Dissociation Curve of Hemoglobin.—A method is described by Anson and Mirsky for obtaining the carbon dioxid dissociation curve of hemochromogen and hemoglobin in dilute or concentrated solutions.

Influence of Spleen on Carbon Monoxid Poisoning.—In an atmosphere which receives a continuous accession of coal gas, guinea-pigs from which the spleens have been removed die sooner than either normal guinea-pigs, those from which omentum has been removed, or those from which one horn of the uterus has been excised.

Enzyme Content of Pancreatic Juice.—The hypothesis is put forward by Mellanby that the enzyme content of pancreatic juice is determined by the vagus nerves, whereas the quantity of bicarbonate solution in which these enzymes are contained is determined by secretin. On this hypothesis, secretin may play a subsidiary part in pancreatic digestion, since it only ensures the presence in the intestine of an optimal reaction for the activity of the pancreatic enzymes.

Effect of Insulin and Pituitary Extract on Liver.—Coope's experiments show that a single dose of insulin given simultaneously with pituitary extract profoundly modifies, and in many cases completely prevents, the effect of pituitary extract on the liver fat.

Lancet, London

1: 1117-1172 (May 30) 1925

*Blood Pressure. R. Lake.—p. 1117.
*Late Rickets and Osteomalacia in Delhi. G. Stapleton.—p. 1119.
Collodial Kaolin. I. Properties. W. J. Pope and R. T. M. Haines.—p. 1123.
Id. II. Absorption of Toxin by Kaolin. J. W. H. Eyre.—p. 1124.
Local Insulin Reactions. R. D. Lawrence.—p. 1125
*Acetylene, Ethylene, Propylene. F. E. Shipway.—p. 1126.

Blood Pressure and Vertigo.—The relation of blood pressure to the treatment and diagnosis of vertigo and tinnitus is discussed by Lake.

Late Rickets and Osteomalacia.—Analysis of seventy-three cases had convinced Stapleton that there is no sharp dividing line clinically between late rickets and osteomalacia cases, but intermediate cases are found showing characteristics of both. The determining cause in the majority of cases is the lack of sunlight and exercise associated with the purdah life.

Acetylene, Ethylene, Propylene.—These anesthetics have been given a trial at Guy's Hospital and report of the results is made by Shipway. While a favorable view has been taken of ethylene, acetylene was discarded after a short trial, and propylene has received as yet insufficient trial to warrant the drawing of definite conclusions. So far results from its use have been good.

Medical Journal of Australia, Sydney

1: 471-498 (May 9) 1925

*Intradermal Reaction in Hydatid Disease; Its Clinical Value. H. R. Dew, C. H. Kellaway and F. E. Williams.—p. 471.
*Alteration in Blood Sugar Values After Intensive Deep Roentgen-Ray Irradiation. H. Flecker and G. Cameron.—p. 478.
Sinsusitis as Source of Disease and Its Effective Treatment. S. Pern.—p. 480.
Tasmanian Sanatorium for Consumptives. F. M. Lovett.—p. 483.

Intradermal Test in Hydatid Disease.—The test employed by Dew, Kellaway and Williams consists in the intradermal injection of 2 c.c. of hydatid fluid obtained by aseptic puncture of cysts from the lungs and liver of sheep. The wheal produced by the injection of hydatid fluid rapidly increases in size, tends to extend by pseudopodial outrunners and may reach 5 cm. in diameter. This wheal has generally reached its maximum in from fifteen to twenty minutes. The test is specific, although care has to be taken to provide controls and some experience in interpreting it is necessary to avoid pseudopositive readings. In preoperative or doubtful cases the test is of extreme value. In uncomplicated cases it is much more reliabie than the complement fixation test, giving 92 per cent. of positive findings. Suppuration or rupture does not cause disappearance of the power to react, but the "delayed" phase is inhibited or suppressed. In postoperative cases the test remains positive in all patients and even in cured patients it may yield a reaction sixteen years after operation. There is great variation in the type of response immediately after operation, which is difficult to explain in the present state of knowledge.

Effect of Roentgen Ray on Blood Sugar.—Flecker and Cameron noted a temporary depression of the blood sugar in experimental animals within twenty-four hours after exposure with a return to normal in from four to eight days.

Medical Journal of South Africa, Johannesburg

20: 255-282 (April) 1925

*Prevalence of Cancer Among Native Races of Natal and Zululand. W. Watkins-Pitsford.—p. 257.
Symposium on Dental Sepsis; Oral Infection. E. A. Willey.—p. 260.
Systemic Disease Associated with Dental Infection. R. L. Girdwood.—p. 261.
Bacteriology of Pyorrhea. J. Pratt-Johnson.—p. 264.
Case of Chronic Ulcerative Colitis. I. J. Block.—p. 267.
Case of Gasserian Ganglion Successfully Removed. R. L. Daly.—p. 268.

Cancer Among Natives in Natal and Zululand.—During the four years, 1906-1909, eight deaths from cancer were reported among the whole native population (930,000) of Natal and Zululand, giving a crude death rate during the period of approximately 0.21 per hundred thousand per annum. For the same period the average yearly death rate from cancer among the Indian immigrants was approximately 11.9 and among the Europeans 57.5. The native death rate per hundred thousand from all causes during the year 1906 was 1,317. The cancers were of the breast, liver, stomach, glans penis and one was a sarcoma of the shoulder. In addition thirty-nine specimens of new growth from living natives were submitted for examination. Eighteen of these proved to be simple tumors, nine sarcoma, nine carcinoma, one rodent ulcer, one intracystic papilloma of the breast, and one compound parotid tumor.

Sei-I-Kwai Medical Journal, Tokyo

44: 1-18 (April) 1925

Bacteriophage. II. Physiochemical Properties of d'Herelles' Lytic Agens. Yoshio.—p. 1.
Pathologic Anatomy of Pleuropneumonia bovis contagiosa in Chosen. T. Kimura, T. Fukushima and T. Eujii.—p. 16.
Sarcoma of Lumbar Vertebra. N. Keno.—p. 18.

Bulletin de l'Académie de Médecine, Paris

93: 475-521 (May 5) 1925

Dosage of Insulin. A. Desgrez et al.—p. 478.
Public Health Service in African Colonies. Brumpt and Joyeux.—p. 490.
Classification of Bacillus of Avian Salmonellosis. Lignières.—p. 500.
*Pathogenesis and Treatment of Asthma. D. Danielopolu.—p. 505.
*Double Heart Impulse. E. Donzelot.—p. 514.
Acoustic Requirements of Public Halls. Marage.—p. 517.

Pathogenesis of Asthma, Its Medical and Surgical Treatment.—Danielopolu reiterates that local factors, such as a local anaphylactic condition, an intrapulmonary or extrapulmonary affection, play the main rôle in the occurrence of asthma. Calcium chlorid, given for weeks at a daily dose of from 5 to 10 gm., reduces the general amphotonia and the local hyperexcitability, and thus aids in prevention of the paroxysms. Quinin gave good results in one case; iodids showed a favorable adjuvant action. Autoserotherapy, autohemotherapy and tuberculin therapy have all proved useful in certain cases, as also measures to interrupt the reflex arc. The operation suggested consists of cervical sympathectomy, severing all the fibers from the vagus or superior laryngeal nerve entering the thorax; also cutting the rami communicantes connecting the inferior cervical ganglion and the first thoracic nerve with the sixth, seventh and eighth cervical and first dorsal nerves. The operation should be performed on both sides. If the heart is sound, removal of the right stellate ganglion may suffice.

Double Nature of Cardiac Automatism.—On the basis of numerous clinical findings, Donzelot affirms that the cardiac cycle involves both an auricular impulse and a ventricular impulse. The auricular impulse, originating in Keith's node, has a subordinate significance, since the periodic contraction of the auricle protects the ventricle, but is not a necessity for the work of the heart. The output of the heart may be still sufficient, without any auricular contraction. The ventricular impulse, developed in Tawara's node, is of primordial importance. This, he thinks, distributes the blood throughout the organism by the ventricle systole. Disturbances of the impulse production here are grave, and its loss entails complete arrest of the circulation. The theory of a double heart impulse, he says, throws a new light on arrhythmias.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 635-670 (May 1) 1925

Technic for Microscopic Study of Duodenal Juice. Chiray and Triboulet.—p. 635.
Anemia in Uremia. M. Renaud.—p. 636.
Blood Transfusion in Anemia from Uremia. P. E. Weil and Lamy.—p. 637.
Amebic Abscess Cured Without Operation. Chauffard and Clément.—p. 646.
*Hyperglycemia Test in the Obese. M. Labbé and R. Boulin.—p. 649.
*Jaundice from Ascarids. M. Labbé and L. Denoyelle.—p. 653.
Eight Hundred Epinephrin Injections in Case of Asthma. G. Etienne et al.—p. 657.
*Serotherapy in a Case of Acute Myelitis. G. Etienne.—p. 662.

Glucose Tolerance Tests in the Obese.—Labbé and Boulin state that the test alimentary hyperglycemia persists in the obese for more than three hours, and is never followed by a hypoglycemia, while in a normal person it disappears in less than seventy-seven minutes at most. This disturbance of glucose regulation remains stationary in most obese subjects; sometimes it develops into diabetes, or in a paradiabetic condition, easily cured

Jaundice from Obstruction by Ascarids — Labbé and Denoyelle's case, in a young woman, presented the character of a catarrhal jaundice, and was not accompanied by fever or pain. The diagnosis was made when expulsion of several ascarids resulted in a transient improvement. Vigorous treatment for the helminthiasis was followed by a definite recovery. The ascarids evidently had obstructed the common bile duct, causing retention of the bile. In cases of catarrhal jaundice of uncertain nature, examination of the stools for helminth ova may suggest an early diagnosis.

Myelitis with Aspect of Purpura Infection.—Etienne's patient, aged 36, had suddenly developed a syndrome of grave infection of septicemia type. An ataxic-adynamic condition, purpura, swelling of the joints and generalized rigidity were followed by a progressive ascending paralysis. Protein therapy induced a partial improvement, and an antipoliomyelitis serum completed the cure in a few days. The serotherapy was not begun till the thirty-seventh day.

Comptes Rendus de la Société de Biologie, Paris

92: 1089-1172 (May 1) 1925. Partial Index

*Nitrogen Metabolism in Hyperthyroidism. G. Etienne et al.—p. 1094.
*Nitrogen Metabolism in Thyroid Insufficiency. G. Etienne et al.—p. 1095.
*Combined Infection in Amebiasis. de Lavergne and Florentin.—p. 1097.
*Technic for Enrichment of Stools. A. Robin.—p. 1099.
*Tissue Glycolysis in Diabetes. Mauriac and Aubertin.—p. 1101.
*Action of Radium on Vaccines. R. Bruynoghe.—p. 1110.
*Polycythemia in Emphysema. van den Eeckhout and Lahaye.—p. 1112.
*Antidiphtheria Vaccination. P. Nélis.—p. 1114.
*Action of Quinin on Diphtheria Toxin. P. Nélis.—p. 1116.
Sedimentation and Surface Tension in Shock. E. Zunz.—p. 1119.
Sensitizing Action of Bacillus Mesentericus. Petrovanu.—p. 1124.
Bacteriolytic Action of Streptothrix. A. Gratia and S. Dath.—p. 1125.
Muscle Antagonism in Voluntary Movements. Noica.—p. 1128.
Hemolytic Properties of Blood Platelets. C. Popesco.—p. 1136.
*Vaccination Against Typhoid. Cantacuzène and Panaitescu.—p. 1138.
*Effect of Dysentery Toxin on Nervous System. A. Tupa.—p. 1141.
Oculointestinal Reflex. D. Danielopolu et al.—p. 1143.
Action of Epinephrin on Intestine. Danielopolu et al.—p. 1146.
Surgical Treatment of Angina Pectoris. Danielopolu and Goliciu.—p. 1150.
Radiation of Pain in Angina Pectoris. D. Danielopolu.—p. 1155.
Blood of Portal System. M. Popper and C. Popesco-Inotesti.—p. 1160.
Associated Infection in Tuberculosis. Olinesco and Popper.—p. 1162.
*Avitaminosis and Rickets. Banu et al.—p. 1166.
*Microbes in Human Milk. T. Mironesco and A. Jonesco.—p. 1168.
*Rôle of Vagus in Epileptic Seizure. A. Popea et al.—p. 1170.

Nitrogen Metabolism in Hyperthyroidism and in Thyroid Insufficiency.—Etienne, Richard and Roesch's observations include twenty-two patients with a syndrome of exophthalmic goiter, and ten with thyroid insufficiency. Nitrogen metabolism changes were noted in both affections, and patients in both groups with a high Ambard coefficient were successfully treated with thyroid extract. These facts, they say, suggest the pathogenic identity of different thyroid conditions.

Associated Fusiform and Spirochete Infection in Rectum.—Examination of the rectum of a patient with amebic dysentery revealed the presence of a diphtheroid false membrane, resembling that in Vincent's angina. This combined infection had developed in the intestinal tissue altered by the amebiasis. This explains the efficacy of neo-arsphenamin in the disease.

Method of Enrichment of Feces for Examination for Parasites.—Robin asserts that with his technic, in which Schweitzer's reagent is used, he obtains enrichments comparable to those by Téléman's method, but free from nondigested elements, often rendering the preparation indistinct. With helminth ova the enrichments appear to be superior to those by Téléman's method, while with encysted protozoa the results are identical or even better. The ova and cysts appear only slightly modified.

Tissue Glycolysis in Experimental Diabetes.—Mauriac and Aubertin's investigation in rabbits and dogs very often showed an equal glycemia in the femoral artery and in the vein. But in the kidney, the venous glycemia was almost always less pronounced than the arterial glycemia, with a difference of milligrams per hundred cubic centimeters. The muscle glycogen, interposed between the femoral and the visceral vascular system, compensates for the destruction of sugar in the tissues.

Action of Radium on Vaccine.—Bruynoghe applied to the cornea and to the shaved skin of rabbits vaccine exposed to radium, or not thus exposed. Comparison of the findings testified to the destruction of the vaccine virus by the radium emanations.

Compensatory Polycythemia with Pulmonary Emphysema.—After citing a case of polycythemia that developed in a man with pneumothorax and polycythemia in a dog that had had part of the lung blocked with paraffin, van den Eeckhout and Lahaye describe their research on ten old horses. While the blood of the normal animals showed 7,000,000 erythrocytes, there were from 8,000,000 to 14,500,000 in the blood of horses with emphysema. Evidently a compensatory polycythemia develops with an insufficient respiration surface.

Part of Anatoxin in Vaccination Against Diphtheria.—Nine months after vaccination Nélis noted in seven out of ten rabbits, twice inoculated (at twenty day intervals) with anatoxin (1 c.c.), a negative reaction with 1/60, 1/25, 1/10 and 1/5 of a lethal dose of toxin. With 0.5 c.c. of anatoxin the immunity did not persist over five months. He concludes that an anatoxin rich in toxoids possesses a high antigen value. Inactivated toxins, deprived of toxoids, may also have an antigen property, but the immunity appears slowly.

Effect of Quinin on Diphtheria Toxin.—Experiments on guinea-pigs, made by Nélis, showed an antitoxic action of soluble salts of quinin on diphtheria toxin. The action may be catalytic or due to changes induced in the colloids of the toxin.

Two Ways of Typhoid and Paratyphoid Vaccination.—Cantacuzène and Panaitescu's statistics cover 8,673 persons inoculated subcutaneously; 2,286 given Besredka's bile-vaccine by mouth, and 5,575 control subjects. A certain number were vaccinated once, others twice or three times. In six and a half months ninety-six cases of typhoid and three of paratyphoid were recorded, including only nine vaccinated patients (three inoculated subcutaneously). The disease appeared from three to five months after the vaccination. The morbidity was thus 0.035 per cent. after subcutaneous vaccination; 0.26 after the buccal administration, while it was 1.8 per cent. in the controls.

Lesions of Nervous System from Dysentery Toxin.—Tupa's research on 200 rabbits, inoculated with dysentery toxin, demonstrated that in dysentery the nervous system is affected more than the intestine. The lesions are localized in the cervical enlargement of the spinal cord and in the bulbar region. The gray matter of the cord suffered most.

No Rickets with Avitaminosis, but Retarded Growth.—Banu, Negresco and Heresco submitted young dogs to a vitamin deficiency diet. The development of the animals was retarded and the general nutrition disturbed. Heat and lack of light further enhanced the phenomena. But in no instance did lesions of rickets appear.

Elimination of Microbes by Human Milk.—None of eight infants, fed at the breast by women with scarlet fever, contracted the disease. Colon bacilli were found in the milk of a woman with sudden fever and digestive disturbances. The condition of the nursling was not affected. In a case of typhoid fever the specific bacillus was detected in the milk on the eleventh day of the disease. The nursling, aged 25 days, died two weeks afterward with signs of typhoid. Examination of the milk in a case of cerebrospinal meningitis revealed no microbes.

Rôle of Hypervagotonia in Epileptic Seizure.—In research on forty-five epileptics, Popea, Eustatziu and Holban paralyzed the vagus with atropin. The injection was followed in ten minutes by a seizure in six persons. In one case the seizure occurred thirty minutes after the test, in fifteen cases in the first twelve hours. Their conclusion is that the seizure may be accompanied or even preceded by hypervagotonia, but that the latter is not the causal factor of epileptic seizures.

Presse Médicale, Paris

33: 625-640 (May 13) 1925

Reflex Disturbances in Digestive Tract Originating in Gallbladder. Ramond and Parturier.—p. 625.
*Erythrocyte Sedimentation After Meals. S. Balachowsky.—p. 626.
*Intracardiac Injections of Epinephrin. T. Asteriades.—p. 629.

Changes in Sedimentation Speed Occurring After Meals.—Balachowsky describes a technic for the estimation of changes in the sedimentation speed of erythrocytes immediately after meals. A drop of blood suffices for the test. One hundred measurements made by this method showed that acceleration or retardation of sedimentation speed may occur suddenly after meals. The changes appear to be connected with the concentration of the erythrocytes, depending on vasomotor reflexes. These postprandial variations may be valuable in diagnosis of gastric affections, especially cancer.

Intracardiac Injection of Epinephrin.—Asteriades reports that a single injection of 0.25 mg. of epinephrin, immediately following syncope from chloroform, definitely resuscitated a young man. Two injections of 0.25 mg. in a boy, aged 5, and three injections in a woman, aged 28, made eight and ten minutes after the syncope, failed to reanimate the patients.

33: 641-656 (May 16) 1925

*Sedimentation Test in Tuberculosis. Salomon and Valtis.—p. 644.
Magnesium Sulphate in Treatment of Eclampsia. R. Clément.—p. 646.

Integral Sedimentation Test in Pulmonary Tuberculosis.—Tests of the sedimentation in citrated blood in three layers, first the red corpuscles, then the white corpuscles, and then the citrated plasma, showed Salomon and Valtis that while the time required for this sedimentation is from four to over eleven or even seventeen hours in normal persons, the sedimentation takes only from twenty to fifty-five minutes in tuberculosis, with a developing process, and not more than twenty or thirty minutes in grave cases. In a benign form of tuberculosis, with fibroid changes, the time of sedimentation varies between seventy minutes and two hours. General improvement following artificial pneumothorax is accompanied by retarding of the sedimentation, while a pleural complication or the formation of a new focus in the lungs reduces the sedimentation time. The sedimentation test may be helpful in prognosis of tuberculosis as well as of induced pneumothorax.

Revue de Médecine, Paris

42: 1-80, 1925

*Physiology of the Lung. G. H. Roger and L. Binet.—p. 1.

Physiologic Rôle of the Lung.—Roger and Binet's research has confirmed that the lung tissue destroys fats, transforming them into products which do not pass into ether extracts. This lipopexy and lipodieresis (destruction of fats) appeared constantly in the arterial blood in vitro while in the venous blood the fats were almost unchanged. Lipodieresis is a phenomenon of oxidation, since passage of air stimulated the destruction of fats in the arterial blood, and even induced a slight lipodieresis in the venous blood. The blood of the left heart contains less protein sugar than the right heart, proving that the lung splits the sugar and releases glucose. Intravenous injections of lung extract slightly reduced the glycemia and notably decreased the lipemia in animals. Subcutaneous injections of lung extract from a dog in inanition reduced the weight of the animal, while a contrary effect was obtained with the extract from dogs on a fattening diet. They reiterate that the lung appears to be a gland important in metabolism, and that the fats of the lung are rich in vitamins.

Schweizerische medizinische Wochenschrift, Basel

55: 381-404 (April 30) 1925

*Flatfoot and Its Treatment. M. Pierroz.—p. 381.
Gennerich's Intraspinal Treatment of General Paralysis. T. Brunner. —p. 390.
Perforation of Intestine in a Hernia. E. Juillard.—p. 392.
*Relation to Reality in Psychanalytic Treatment. H. Knoll.—p. 394.

Flatfoot and Its Treatment.—Pierroz describes the pathology and gymnastic treatment of flatfoot.

Relation to Reality in Psychanalysis.—Knoll warns against premature disclosing of the evident complexes in the psychanalytic treatment. The physician must take care to keep the patient in touch with reality, and has to ascertain how he utilizes the acquired insight. If the patient refuses to face realities, the treatment should be discontinued before he sinks completely into his unconscious phantasies.

Archivio Italiano di Chirurgia, Bologna

10: 821-940 (Dec.) 1924

*Jejunal Ulcer After Gastro-Enterostomy. Dogliotti and Riccio.—p. 821.
The van Slyke Index of Urea Excretion. F. Vicentini.—p. 858.
*Epidemic Micrococcus Inguinal Adenitis. R. A. Sala.—p. 867.
Surgical Kidney and Its Treatment. R. Broglio.—p. 901.

Peptic Ulcers.—Dogliotti and Riccio relate that they found it constantly possible to perform all kinds of operations on the stomachs of dogs without development of peptic ulcer, confirming their clinical experience that this is the rule when the operations are done without unnecessary traction or injury of tissues or abuse of nonabsorbable material, and a

milk diet is enforced for twenty-five days and a semisolid for an additional month. They also refrained from repeated roentgen examinations with contrast suspensions or use of the stomach tube. They confirm in the most categoric manner that the mucosa of the jejunum is absolutely indifferent to the gastric secretions so long as it is healthy.

Epidemic Inguinal Adenitis.—Sala cultivated *Micrococcus paramelitensis* in twenty-six cases of enlargement and suppuration of the inguinal and crural glands in 1921. Bubonic plague had been suspected at first. The intensity of the inflammatory process developing in these glands was in marked contrast to the integrity of the skin. The epidemic followed a local epidemic of 900 cases of jaundice. Bed rest, neo-arsphenamin and excision of the suppurating mass of glands gave the best results.

Pediatria, Naples

33: 449-504 (May 1) 1925

*Treatment of Infantile Leishmaniasis. S. Cannata.—p. 449.
*Hemopoietic Organs in Secondary Anemia. R. Pollitzer.—p. 453.
Vaccine Prevention of Scarlet Fever. F. Amenta.—p. 474.
Frequency of Child Applicants in Dermatologic Dispensary. A. F. Canelli.—p. 478.
Congenital Spasm of Cardia in Child, Aged 6. E. Castronovo.—p. 483.

Treatment of Infantile Leishmaniasis.—Cannata shows that some infections which are resistant to potassium and antimony tartrate yield to the homologous sodium compound.

Hematopoietic Organs in Secondary Anemia.—Pollitzer finds that the histologic changes of the bone marrow in anemic children depend on the etiology rather than on the intensity of the disease. When suppuration, or malnutrition, is the cause, the immature white cells of the bone marrow are present in about three times larger amounts than the nucleated red cells (postnatal type of erythropoiesis). The number of erythroblasts is equal or a little higher than the number of immature whites in anemia due to hereditary syphilis, malaria or leishmaniasis (prenatal type). In pernicious anemia, the embryonal megaloblastic type is pronounced.

Policlinico, Rome

32: 623-657 (May 4) 1925

*Visualization of Gallbladder. Sabatini and Milani.—p. 623.
*Postoperative Tetanus. R. Mosti.—p. 629.
Baccelli's Treatment of Postoperative Tetanus. S. Bivona.—p. 631.
*Tansini's Sign. R. Grignani.—p. 634.

Visualization of Gallbladder by Bromids.—Sabatini and Milani administer 10-20 gm. of sodium or strontium bromid in 100 gm. of water by mouth and make roentgenograms of the gallbladder five, eight and twelve hours later. The patient has to be on very light diet the preceding day. The method is simple, safe and without trouble for the patient.

Postoperative Tetanus.—In Mosti's two patients the postoperative tetanus was probably due to an infection by the feces (gangrenous hernia in one, colpoperineorrhaphy in the other). The second patient recovered after large intraspinal and intravenous doses of antitetanus serum and injections of phenol.

Tansini's Sign.—Grignani asserts that an enlargement of the abdomen with stenosis of the pylorus indicates, in the majority of the patients, metastasis of cancer in the abdominal organs.

Riforma Medica, Naples

41: 265-288 (March 23) 1925

Biologic and Physical Bases for Radiotherapy. Perussia.—p. 265.
Possible New Infection in Sixth Year of Syphilis. Oro.—p. 268.
Five Cases of Giant Appendix. G. Carisi.—p. 273.
Form of Sporulation of Ameba in Blood Stream. M. Gioseffi.—p. 276.
*Case of Beggiatoa Thrush. O. Casagrandi.—p. 277.

Beggiatoa Thrush.—Casagrandi calls the beggiatoa cultivated from a case of thrush in the vagina, *B. albicans*, and presents it as a new morbid entity. The patient applied for treatment mainly on account of the strong odor of sulphuretted hydrogen. Iodin and potassium permanganate treatment was futile, but calcium chlorid proved effectual both in treatment and in prophylaxis.

41: 289-312 (March 30) 1925

*Tender Point in Spleen Region in Malaria. E. Zito.—p. 289.
Slow Chronic Apyretic Pulmonary Tuberculosis. La Torre.—p. 291.
*The Costa Reaction. M. Bagliani.—p. 293.
Splenectomy After Years of Fever in Malaria. D. Giordano.—p. 296.
Herpes Infection. I. Iacono.—p. 298.

The Pagniello Point of Special Tenderness in Malaria.—Zito confirmed on 150 malarial subjects the presence in 90 per cent. of a point painful on light pressure, when the finger or the head of a pin was drawn along the ninth left interspace or several interspaces. The point is in the Head zone corresponding to the spleen, and is probably a reflex phenomenon. He never found it in nonmalarial subjects.

The Costa Reaction.—Bagliani states that Costa's procain-formaldehyd test induces the characteristic precipitation very rapidly in tuberculosis, influenza, syphilis and malaria, while in the healthy it takes an hour for even a slight response to be manifest. The reaction seems to be an index of the activity of the process going on, but the clinical import depends on the relative amounts of the elements used in the test, and the length of the interval. The plasma alone seems to be involved, not the fibrin.

Clinica, Montevideo

2: 1-17 (Jan.) 1925

*Prophylaxis of Tuberculosis in Children. V. Zerbino.—p. 1.

Prophylaxis of Tuberculosis in Children.—Zerbino emphasizes the necessity for seeking out the infants and children exposed to contagion, and that the welfare work should include the whole family of the tuberculous.

Prensa Médica Argentina, Buenos Aires

11: 1013-1040 (April 10) 1925

*Blood Cholesterol and Arterial Pressure. J. Heitz.—p. 1013.
Vitiligo with Trophic Joint Lesions. Castex and Camauer.—p. 1017.
Pregnancy Insufficiency of the Liver. R. Mestre.—p. 1026.
*Cholesterol in Relation to Hemolysis. A. H. Roffo.—p. 1035.

Relations Between Cholesterol Content of the Blood and the Blood Pressure.—Heitz states that the highest cholesterol content was encountered in his research in cases of very high blood pressure with high diastolic pressure, and in kidney disease, even with low blood pressure. He queries whether hyperplasia of the suprarenals may not be a reaction common to both these conditions.

Cholesterol and Hemolysis.—Roffo's charts show a regular and parallel increase in the hemolysin and cholesterol content of the blood with advancing age in the animals examined. The cholesterol content increases parallel to the hemolytic power in different species of animals, from the guinea-pig, with only 0.383 per thousand cholesterol, to the dog with 1.292, the fowl with 1.700, and the eel with 6.836.

Repertorio de Medicina y Cirugía, Bogota

16: 149-190 (Jan.) 1925

*Classification of Dystrophias in Nurslings. C. Torres Umaña.—p. 152.
*Neurosyphilis. G. Toro Villa.—p. 161.
Official Report on Part of Hookworm Campaign. C. Franco F.—p. 171.
Idem. S. Tellez.—p. 182.

Classification of Dystrophias in Infants.—Torres Umaña segregates the digestive and extradigestive dystrophias, including in the digestive the chemical, mechanical and nervous dyspepsias and exogenous intestinal infection. The extradigestive are the result of endocrine disturbances, congenital or acquired, of inadequate or improper feeding, or of parenteral infection. The feeding history, the condition of the viscera, microchemical study of the feces and comparison of the intake with the excretion of certain substances will reveal which are primary and which secondary disturbances, and the proper treatment.

Neurosyphilis.—Toro Villa argues that there are no tardy localizations of neurosyphilis but only tardy manifestations of early localizations. In fully 25 per cent. of the cases of neurosyphilis the nervous system is attacked early, sometimes only transiently, but in other cases durably injured. He advises intraspinal treatment when the changes in the cerebrospinal fluid persist in spite of good general treatment.

Revista de la Asoc. Médica Argentina, Buenos Aires

38: 1-279 (April) 1925

Trachoma in Argentina. Prevalence and Prophylaxis. Demaria.—p. 5.
*Test Meals in Kidney Function Tests. C. P. Waldorp.—p. 39.
Clinical Experiences in Idem. Waldorp and Bordo.—p. 60.
A Tuberculous Duodenal Ulcer. J. Orgaz.—p. 123.
Insulin Treatment. Theory and Practice. P. Escudero.—p. 135.
*Treatment of Gastric and Duodenal Ulcers. Novaro et al.—p. 167.
*Operative Treatment of Kidney Calculi. Castaño and Matta.—p. 203.
*Pressure on the Brain. E. Adrogué and M. Balado.—p. 252.

Test Meals in Exploration of the Kidneys.—Waldorp has long insisted on the advantages of testing the functional capacity of the kidneys on a test meal. He prefers the Schlayer technic for the purpose, and gives extensive tables of the findings in nineteen cases in which various functional tests were repeatedly applied. With the Schlayer technic, the first day the patient eats five light test meals; all but two are different, forming a combination of various diuretic substances; the second day the five meals are of substances free from any irritating action. He emphasizes the importance of recording the maximal output of urine four hours after the meal, and the minimal at the farthest moment, namely, the morning after. Also the importance of the position, reclining promoting and the erect position checking elimination of the fluids ingested. He reiterates also that the fundamental sign of renal insufficiency is the change in the power of concentration, and that the dilution test is the capital sign for the prognosis, as it reveals the ability of the kidney to compensate its own insufficiency.

Present Status of Treatment of Gastric and Duodenal Ulcers.—Novaro and his co-workers admit that ulcers in the pyloric region are generally surgical, but say that otherwise all call for systematic medical treatment, and this includes vaccine therapy as there is generally mixed infection. Chronic ulcers belong to the surgeon, and they regard gastroenterostomy as only exceptionally called for. In one case Sippy treatment for six months induced great improvement, but then severe hemorrhage compelled an operation for the duodenal ulcer. It was found latent, but not a trace of retrogression could be discovered.

Kidney Calculi.—Castaño and Matta state that there was no fatality in the 45 Argentine cases of pyelotomy for calculi which they have collected, but the mortality was 2.1 per cent. in 1,441 compiled from international literature. When hemorrhage after nephrotomy was mentioned, fully 25 per cent. proved fatal, and the total mortality in 2,022 nephrotomy cases was 10.1 per cent. In the total of 1,807 nephrectomy cases, the mortality was 8.8 per cent., including 6 deaths in the 29 Argentina cases. They conclude from this analysis that in case of hesitation between nephrotomy and nephrectomy, the preference should be given to the latter, as it is less grave and less fatal than nephrotomy. But in bilateral cases the intervention should be conservative in the extreme, as recurrence is so common. The importance of systematic treatment both before and after the intervention is obvious.

Behavior of Pupil with Exaggerated Intracranial Pressure.—Adrogué and Balado state that in experiments on dogs and in clinical cases the morbid dilatation of the pupil from hypertension in the ventricle is characterized by the maximal dilatation and by the fact that the pupil does not contract during sleep (as occurs with mydriasis from amaurosis). When the dilatation of the pupil is unilateral, it corresponds to the ventricle or side of the head involved. Bilateral, it is a sign of ventricular hypertension if there are no respiratory and heart disturbances. Such disturbances are inevitable with subarachnoid hypertension sufficient to induce bilateral morbid dilatation of the pupil. The bilateral hypertension mydriasis used to be ascribed to some direct lesion of the motor oculi, but their research demonstrated that this nerve was often intact.

Revista de Medicina y Cirugía, Caracas

7: 239-260, 1924

Electricity in Treatment of Diarrhea in Children. V. Peña.—p. 239.
*Intermittent Albuminuria. C. André.—p. 241.
Serum Sickness Should Not Deter from Serotherapy. Peña.—p. 253.

Intermittent Albuminuria.—André is convinced that intermittent albuminuria is a manifestation of an insidious nephritis; this heals in time and the albuminuria gradually disappears, or it may persist as orthostatic or fatigue albuminuria. The prompt influence of absolute rest demonstrates the tendency to spontaneous cure. Reclining after each meal aids digestion and combats debility. The tendency to albuminuria may subside if the urine is kept slightly alkaline, but the most important measure of all is a change to out-of-door country life. A few months in the country may be equivalent to a resurrection.

Semana Médica, Buenos Aires

1: 785-840 (April 9) 1925

Hookworm in Corrientes Province. Goitia and Castillo Odena.—p. 785.
*Active Rheumatism of the Heart. J. Raúl Goyena.—p. 789.
*Identification of Roentgenograms. J. Mendioroz.—p. 793.
Colorimetric Estimation of Urea. J. A. Sánchez.—p. 795.
Intestinal Disinfectants in Pediatrics. J. J. Darnet.—p. 798.
*Sphincter Function of Ileocecal Valve. R. Broucá.—p. 800.
Neutral Oil for Vehicle. R. Giordano.—p. 822.

Acute Febrile Rheumatism of the Heart.—The clinical picture of acute myocarditis and a pleuropulmonary process developed suddenly in a healthy young man; only repeated questioning recalled vague and transient pains in one shoulder a year before. The assumption of rheumatism was confirmed by the benefit from salicylates, supplemented with digitalis. This arrested the recurring attacks of inflammatory weakening of the heart action.

Finger Print Signature on Roentgenograms.—Mendioroz applies the finger print on a white porous card, using an opaque ointment made of a saturated mixture of red oxid of mercury, or the protochlorid in a wax preparation. Addition of finger-print ink renders the print visible at all times.

The Sphincter Function of the Ileocecal Valve.—This profusely illustrated study confirms the assumption of the action of a ringlike muscle which, in the cat at least, is controlled by a center in the spinal cord. This center can be stimulated by reflex action.

Archiv für klinische Chirurgie, Berlin

135: 1-492 (April 2) 1925

*Habitual Dislocation of Shoulder. W. Pilz.—p. 1.
Hypnosis in Surgery and Its Borderland. A. Haas.—p. 23.
*Innervation of Intraperitoneal Adhesions. A. Wereschinski.—p. 39.
Bone Regeneration. H. Koch.—p. 48.
*Treatment of Trigeminal Neuralgia. B. Gutnikoff.—p. 79.
Intralaryngotracheal Goiter. Bundschuh.—p. 106.
Gallbladder Stasis from Mechanical Causes. Büdinger.—p. 117.
Anatomy of So-Called Accessory Liver. Walzel and Gold.—p. 138.
Iodin Treatment of Goiter. Breitner and Orator.—p. 143.
Unusual Complications After Thyroidectomy. Just.—p. 152.
Recurring Goiter. E. Just.—p. 160.
*Lymphocytosis in Exophthalmic Goiter. Beresow.—p. 166.
Primary Sarcoma of Spleen. H. Köhler.—p. 194.
Artificial Ureter. R. Demel.—p. 203.
Adamantinoma and Odontogenous Tumors of the Jaw. Lukomsky.—p. 233.
*Obstruction of Common Bile Duct and Jaundice. Haberland.—p. 248.
*Vicious Circle in Postoperative Jejunal Ulcer. K. Blond.—p. 281.
Reconstruction of Thumb with Big Toe. W. Porzelt.—p. 340.
Experiments in Chromocholoscopy. W. Suchow.—p. 356.
Fistulas of Pancreas and Pancreatic Duct. Kleinschmidt.—p. 363.
*Appendicitis and Oxyuris. H. Steichele.—p. 373.
Toxic Process in Surgical Tuberculosis. G. Kelemen.—p. 382.
*Effect of Section of Sympathetic on Local Infections. E. Lick.—p. 393.
*Obstruction of Bile Ducts by Cholesterol Sand. K. Büdinger.—p. 406.
Autoplastic Bone Transplantation. V. Hoffmann.—p. 413.
"Biologic Origin of Gastric Cancer." G. E. Konjetzny.—p. 486.
Hallux Valgus. O. Hagen-Torn.—p. 490.

Roentgen Examination of Habitual Dislocation of Shoulder.—Pilz asserts that in recurrent dislocation changes usually occur in the bone. Roentgen findings afford a reliable and adequate picture of the conditions in the bony parts of the joint.

Nerve Fibers in Intraperitoneal Adhesions.—Wereschinski states that his pathologic-anatomic material, experimental and clinical, confirms the presence of nerve tissue in adhesions. The nerve fibers develop from the preexisting nerves in the adjacent tissues. These nerve filaments in the intraperitoneal adhesions, described by Girgolaff and himself, apparently play a part in the formation of the sensory reflex arc.

Alcohol Injection in Gasserian Ganglion for Trigeminal Neuralgia.—Complete recovery followed in twenty-seven of

Gutnikoff's thirty-five cases, in eighteen cases after one injection, in nine after two. Operative intervention for the removal of the gasserian ganglion—even by experienced surgeons like Krause—results in a mortality of 12 per cent. Seventeen illustrations are included, depicting the anatomy of the region, the manner of procedure, and possible injuries by the needle to the eustachian tube and to the outer wall and the intracranial portion of the internal carotid.

Instability of Lymphocytosis as Element in Diagnosis and Prognosis.—Beresow's purpose is to show the increased stability of the lymphocytosis toward atropin, parallel to the changes in the vegetative nervous system, through the action of the hormones of the thyroid and other endocrine glands.

Relation of Obstruction of Common Bile Duct to Jaundice.—Haberland reports on twenty-six further experiments, tying or resecting the common bile duct in dogs. With no infection in the bile ducts, healthy grown dogs gave no evidence of illness during the first four weeks. Biliary pigment appeared in the blood and urine six to twelve hours after the operation. The skin did not become yellow, the highest bilirubin value in the serum being only 1.43 mg. per hundred cubic centimeters. The kidneys eliminated the bilirubin immediately, as the threshold value in dogs is low. After four weeks, grave symptoms appeared, with cirrhosis of the liver, ascites from obstruction, and death due to intoxication, cachexia, and heart weakness. Yellowness of the skin was noted in the sick dogs. Experiments on other healthy grown animals resulted in a slight yellowing of the skin after a few days in all except in rabbits. As the threshold for bilirubin in the kidneys and skin differs greatly in the various animal species, the results after resection of the common bile duct present marked differences, and only the sum total of the observations justifies conclusions.

Vicious Circle After Gastro-Enterostomy and Postoperative Jejunal Ulcer.—Blond says that postoperative jejunal ulcers and probably all other ulcers are caused by circular spasms of the gastric and duodenal musculature. How and where these spasms originate is not always evident. The intermittent spastic incarceration which he considers probable does not exclude mechanical, chemical, and circulatory disturbances, present in the symptom-complex, but of secondary importance in the origin of the spasms. The clinical picture of so-called arteriomesenteric occlusion may be caused by circular spasms, especially after an operation leading to lesions of the autonomous centers in the walls. Neither surgical measures nor internal therapy is the cause.

Appendicitis and Oxyuris.—Steichele describes a set of symptoms, produced by oxyuris, which suggests appendicitis. The symptoms allow no certain differentiation between an oxyuris appendicitis and true inflammation of the appendix. The cases with oxyuris in the appendix are generally chronic. The condition is more prevalent in women than in men.

Effect of Section of the Sympathetic on Local Infections.—Liek's experiments on animals with injection of anthrax cultures after the section were not extensive, but they seem to him to prove that in severe infections arterial hyperemia is capable of preventing general infection by reenforcing the local resistance.

Obstruction of Bile Ducts by Cholesterol Clumps.—In two of Büdinger's three cases with a clear cut picture of obstruction, clumps like those in thick pea soup appeared in the cholesterol mass.

Deutsches Archiv für klinische Medizin, Leipzig

147: 1-128 (April) 1925

Electrometric Titration of Stomach Contents. K. Leddig.—p. 1.
*Extracardiac Action of Digitalis. Veil and Heilmeyer.—p. 22.
Comparison of Temperature in Mouth and Rectum. H. Zimmermann.—p. 82.
*Diapedesis Hemorrhage into the Pericardium. Nordmann.—p. 100.
Influence of Foods on Cholesterol-Lecithin Ratio. Marie v. Babarczy.—p. 108.

Extracardiac Action of Digitalis.—Veil and Heilmeyer's physiologic research clearly revealed the action of digitalis on the secretory functions of the kidneys, stomach, pancreas, and thyroid, its end-effect on the acid-base balance of the blood, and its property of inducing vagotonia.

Grave Diapedesis Hemorrhage into the Pericardium.—Nordmann describes two cases of hemorrhage through unruptured capillaries in the wall of the aorta and the heart, breaking through into the pericardium, with fatal outcome. The phenomenon is explained by comparison with experimental disturbances of the circulation leading to diapedesis.

Deutsche medizinische Wochenschrift, Berlin

1: 765-806 (May 8) 1925

Eye as Object of Experimental Medicine. W. Löhlein.—p. 765.
Ebstein's Theory of Calculi. H. Nakano.—p. 769. Cont'd.
Psychic Changes in Paralysis Agitans. Ostmann.—p. 770.
*Epidemic of Weil's Disease. Körner.—p. 772.
Ascites in Thrombosis of Portal Vein. E. Melchior.—p. 774.
*Amplifying Heart Sounds with Loud Speakers. G. Schwarz.—p. 777.
*Diagnosis of Syphilis. P. Tachau.—p. 780.
Technic for Insufflation of Tubes. B. Ottow.—p. 783.
*Leishmania Vaccine Reaction. S. M. Jessner and S. Amster.—p. 784.
Cuprum and Potassium Cyanatus in Malaria. Jachontow.—p. 785.
Infectious Diseases. O. Moog.—p. 787.
Sexual Aberations and Diseases of Children. Rohleder.—p. 790.
History of Therapeutics and Pathology. Diepgen.—p. 792. Conc'n.

Epidemic of Weil's Disease.—Körner observed an epidemic of Weil's disease verified by the protective power of convalescents' serum against experimental infection of guinea-pigs. All the patients were young people who had been bathing in a pool around the noon hour. The incubation was eight days. Jaundice appeared in twenty-six out of seventy-six patients. Catarrh of the conjunctiva and nasal mucosa was present in practically all of them. Pains in the neck and legs were distressing.

Amplifying Heart Sounds with Loud Speakers.—Only encouraging results have been obtained so far.

Diagnosis of Syphilis.—Tachau emphasizes the importance of an early diagnosis. One of his patients was a physician with a primary sclerosis of the conjunctiva, diagnosed bacteriologically as diphtheria, until the syphilitic exanthem appeared. Gummas are also often mistreated as tuberculosis.

Leishmania Vaccine Reaction.—Jessner and Amster prepared a vaccine from Leishmania cultures. If the medium is free from blood, the vaccine may be used for cutaneous tests ("leishmaniin reaction").

Klinische Wochenschrift, Berlin

4: 905-952 (May 7) 1925

*Significance of Electrolytes in the Organism. S. G. Zondek.—p. 905.
*Curative Action of High Altitudes. O. Kestner et al.—p. 910.
*Increase in Pulmonary Cancer. W. Berblinger.—p. 913.
*Herpes in Meningococcus Meningitis. P. György.—p. 916.
*Herpes Encephalitis. G. Steiner.—p. 917.
*Cataract from Avitaminosis. A. v. Szily and A. Eckstein.—p. 919.
*Protection Against Light. P. S. Meyer and S. Amster.—p. 921.
Wassermann Reaction with Dry Complement. E. Kuznitzky.—p. 923.
*Blood in Uremia. E. Becher.—p. 924.
*Shaking Cerebrospinal Fluid with Ether. V. Kafka.—p. 924.
Postencephalitic Spasms of Neck Muscles. K. Kolle.—p. 925.
Cholagogues. E. Neubauer.—p. 926.
*Interruption of Pregnancy. C. Bender.—p. 930.
Mellgaard's Chemotherapy of Tuberculosis. H. Ulrici.—p. 934.
A Thermoburette with Pump. E. Kaufmann.—p. 950.

Significance of Electrolytes in the Organism.—Zondek reviews the significance of electrolytes for clinical syndromes, especially tetany. Their changes in the blood are not decisive; it is the change at the cells which causes the different reaction to stimuli. An increase of an ion in the blood increases its concentration on the contact surfaces in the cells. Yet a similar effect is produced if the cells attract the ion from the blood stream, thus diminishing its concentration in the serum (for instance, lowering of the blood calcium after injections of epinephrin).

Curative Action of High Altitude.—Kestner, Dannmeyer, Peemöller and Liebeschütz-Plaut made gas metabolism studies on themselves at a high altitude (2,400 m.). This altitude did not change the oxygen consumption, but the climate, irradiation and cold increased the metabolism.

Increase in Pulmonary Cancer.—Berblinger finds a distinct increase in the frequency of primary cancer of the lung in 1920-1924. Influenza and smoking may be contributing causes.

Herpes in Meningococcus Meningitis.—György observed an instance of a beneficial influence from a strong herpes erup-

tion on cerebrospinal meningitis. The grave symptoms reappeared after the herpes vesicles had dried. No meningococci were found in the vesicles, but a herpes encephalitis could be produced in a rabbit by their contents.

Herpes Encephalitis.—Steiner reviews the encephalitis of rabbits. He concludes that the type due to inoculation of herpes virus is a clinical and histologic entity.

Cataract from Avitaminosis.—Szily and Eckstein publish their modification of McCollum's fodder 3143. They produced with it cataracts in young rats. The probable vitamin that prevents cataract—which they call vitamin Z—is perhaps contained in the wheat gluten.

Protection Against Light, Especially by Tannin.—Meyer and Amster's experiments demonstrated that the skin may be protected with tannin for several hours against strong irradiation by the sun. They recommend it either as a petrolatum containing 10 per cent. tannin, or as a 10 per cent. alcoholic solution.

Blood in Uremia.—Becher found in the protein-free blood filtrate in uremia, a diazo and a urochromogen reaction. The former is chiefly due to the presence of aromatic oxy-acids. In addition, he reiterates his other findings, which have been repeatedly summarized in THE JOURNAL.

Shaking Cerebrospinal Fluid with Ether.—Kafka shook up cerebrospinal fluid with half of its volume of ether. The first fraction of ether shaken with Wassermann-negative fluids became more gelatinous than the ether from Wassermann-positive fluids. Subsequent extracts showed the opposite behavior. The ether gave always a negative biuret test, but extracted the Wassermann reagin from the fluid.

Interruption of Pregnancy.—Bender discusses the social and hygienic indications for abortion. She pleads for legal permission.

Medizinische Klinik, Berlin

21: 685-722 (May 8) 1925

Perthes' Disease. G. Büttner.—p. 685.
*The Agranulocytosis Question. I. Zadek.—p. 688.
Tuberculosis of the Ear. G. Charousek.—p. 690. Conc'n.
*Cerebrospinal Fluid in Compression of Cord. K. Peter.—p. 693.
*Diagnosis of Separation of the Placenta. P. Klein.—p. 698.
*Familial Tuberculosis. Hamburger.—p. 699.
Standardization of Syringes. Straub.—p. 700.
*Perirenal Hematoma. P. Herszky.—p. 700.
*Perforation of Uterus in Artificial Abortion. S. Lessnoi.—p. 702.
"Technic for Intravenous Injection." J. R. Thim.—p. 705.
Relation Between Bacillary Hog Cholera and Paratyphoid B. A. Materna and E. Januschke.—p. 705.
Connection Between War Influenza and Death from Nephritis Seven Years Later. V. Schnizer.—p. 706.
Survey on Pulmonary Tuberculosis. H. Gerhartz.—p. 709.
Legal Adjustment of Relations Between Physicians and Social Insurance. Wreschner.—p. 721.

The Agranulocytosis Question.—Zadek concludes from atypical cases of agranulocytosis that it is not an independent disease, but only an abnormal type of reaction.

Cerebrospinal Fluid in Compression of Cord.—Peter discusses details of the diagnosis especially by means of the Queckenstedt experiment (increase in pressure of the fluid after compression of the jugular veins, if the passage is free), with simultaneous lumbar and cisterna puncture.

Diagnosis of Separation of the Placenta.—Klein asks the woman to strain as for defecation. This causes both the uterus and the cord to descend. When the woman stops straining the uterus rises. The cord rises with it so long as the placenta is not detached.

Predisposition Versus Exposure in Familial Tuberculosis.—Hamburger believes that a predisposition is a more important factor than the frequency of exposure. Children associating with a severely infectious relative do not get infected more frequently than those who associate with a moderately infectious patient. He saw a one year old healthy child playing only once for a few minutes with a tuberculous person. The child died three months later from tuberculous meningitis.

Perirenal Hematoma.—Herszky's patient was a young girl who fell on the buttocks while jumping from a street car. Three weeks later a typhoid state set in, which ended with symptoms of ileus. A large perirenal hematoma was discovered after laparotomy. As the clots were removed, the patient bled to death from a tear in the left suprarenal artery which had caused the apoplexy of the kidney.

Perforation of Uterus in Artificial Abortion.—Lessnoi finds that the percentage of perforations of the uterus with artificial abortion is much larger than generally supposed. The simultaneous injury of the bowel is usually made by a physician. In such complications, a laparotomy is indicated. In simple, sterile perforation, without bleeding, an ice bag and opium may be tried.

Münchener medizinische Wochenschrift, Munich

72: 713-752 (May 1) 1925

Homeopathy. A. Bier.—p. 713. Conc'n, p. 773.
*Diagnosis of Gonorrhea in Women. Danin.—p. 717.
*Malaria Treatment in Neurosyphilis. F. Bering.—p. 719.
Morphinism. O. Wuth.—p. 722.
*Micrococcus Catarrhalis Causing Sepsis. G. Endres.—p. 723.
Idem. F. Schilf.—p. 724.
T. A. Immunization. C. Schöne.—p. 724.
*Ambulant Treatment of Contracted Flatfoot. H. Jordan.—p. 725.
*Epinephrin in Circulatory Failure. C. Haeberlin.—p. 727.
Appliance for Inguinal Hernia. E. Schilcher.—p. 729.
Welfare Work for Cripples. F. Lange.—p. 731. Conc'n.
*Acetylene Anesthesia in Obstetrics. Behrendt and Maier.—p. 734. Conc'n.
Medicolegal Obstetrics. M. Hofmeier.—p. 737.
Resorption from Urethra and Bladder. O. A. Schwarz.—p. 737.
"Technic for Intravenous Injection." F. Ortmann.—p. 738.
*Diagnosis of Cholesteatomatous Suppurations. A. Scheibe.—p. 738.

Diagnosis of Gonorrhea in Women.—Danin found in gonorrhea in women a neutral or alkaline reaction of the vagina. The test paper should be pasted on a finger cot to introduce it into the vagina, avoiding the acid urine and the alkaline secretion from the cervix. All the controls gave an acid reaction. An acid reaction excludes gonorrhea if it is made at least five days after a menstruation or two days before its expected time. Opitz vouches, in a foreword, for the results reported.

Malaria Treatment in Early Stage of Neurosyphilis.—Bering concludes that the malaria treatment influences the beginning changes in the cerebrospinal fluid especially well. A spinal puncture should be made in every syphilitic patient with headaches, or after paralytic symptoms, or with a persistent positive Wassermann reaction in the blood.

Micrococcus Catarrhalis Causing Sepsis.—Endres and Schilf describe the findings in a case of lethal sepsis with endocarditis and nephritis due to *Micrococcus catarrhalis.*

Ambulant Treatment of Contracted Flatfoot.—Jordan confirms the good results of injection of 20-30 c.c. of a 0.5 per cent. solution of procain into the peroneus and extensor muscles, and sometimes also in the tibialis anticus, in spastic flatfoot. One injection—rarely two—was sufficient to relax the spasm enough to make casts.

Continued Subcutaneous Injections of Epinephrin in Circulatory Failure.—Haeberlin recommends subcutaneous injections of epinephrin in grave toxic weakness of the circulation. The injections should be repeated every hour or two. He used 0.1-0.2 c.c. of a 0.1 per cent. solution. The fluid should be massaged into the tissue.

Acetylene Anesthesia in Obstetrics.—Behrendt and Maier extol the advantages of acetylene anesthesia in obstetrics. The blood from the umbilical vein contained always much less (one third to one quarter less) gas than the blood of the mother.

Diagnosis of Cholesteatomatous Suppurations.—In Scheibe's statistics of 169 deaths from otitis media there is not one case of simple chronic suppuration. On the other hand, more than one half of the deaths were due to a so-called cholesteatoma. The simple chronic suppuration is not dangerous even if untreated. Cholesteatoma does not endanger life if properly treated. This may be done conservatively by lavages with the antrum tube. If the practitioner does not know how to use it, the radical operation must be made. In both cases, however, the patient has to be examined every two or three months, because the epidermis, which causes the syndrome, remains. He has to submit to the control for his whole life. The cholesteatoma develops only with epitympanic

perforations of the ear drum. They are situated in the posterior superior or, less commonly, in the anterior superior quadrant, or the whole ear drum may be gone. In every case, however, the perforation reaches to the meatus, from which the epidermis progresses into the middle ear. The otoscopic examination is sometimes difficult. In the innocuous chronic suppuration, the perforation is central or touches the lower border of the meatus. The mucous membrane has a pink color. If a slightly bent sound can pass up behind the border of the meatus, a cholesteatoma is probable. If the meatus is cleaned and the antrum tube frees epidermal masses from the upper parts of the middle ear, the diagnosis is certain. Those who are not sure about the results should clean the meatus and middle ear, dry it and insufflate boric acid. If the pus smells badly after a few days, a cholesteatoma is present. The chorda tympani is frequently affected. Therefore a loss of taste on one half of the tongue speaks also for a cholesteatoma.

Seuchenbekämpfung, Vienna

2: 97-195, 1925. Partial Index

*Varicla Vaccine Immunity. Hammerschmidt.—p. 128.
Histology of Epidemic Encephalitis. F. Lucksch.—p. 143.
*The Bacteriophage in Therapeutics. E. Zdansky.—p. 150.
Jaundice and Infection. E. Lauda.—p. 159.

Smallpox Vaccine Immunity.—Hammerschmidt reviews the conflicting opinions that prevail in regard to the parallel occurrence of antibody production and immunity. Jeki has thrown light on the subject recently by his discovery of a new and exaggerated antibody production after revaccination with heat-killed vaccine, the same as Paschen has reported after revaccination with virulent vaccine which yet had failed to elicit an appreciable reaction. As a new immunization with such avirulent vaccines is scarcely conceivable, Jeki assumes that this action of the heated vaccines must be regarded as a nonspecific shock phenomenon, the same as Matsuda's experience with after-treatment of animals with albumose when their virucidal antibodies seemed to be declining. It is possible that the effect of revaccination with virulent vaccine may have an analogous explanation. It is evident, in any event, that vaccine immunity and the content of the serum in virucidal substances do not have the same simple connection as is accepted for certain other infectious diseases. Certain experiences suggest that the skin may be effectually immunized while the internal organs lack adequate immunity protection, or vice versa.

The Bacteriophage in Therapeutics.—In six of twenty cases Zdansky obtained a clinical and bacteriologic cure under bacteriophage treatment of colon bacillus infection of the urinary tract, long rebellious to all other measures.

Wiener Archiv für innere Medizin, Vienna

10: 1-164 (April 15) 1925

*Chondrodystrophic Dwarfs. J. Donath and A. Vogl.—p. 1.
*Leukocytosis in Man and Dogs. A. Woronoff and J. Riskin.—p. 45.
*Dehydrocholeic Acid in Cholangeitis. Adlersberg and Neubauer.—p. 59.
Diagnostic Use of Effect of Roentgen Irradiation. J. Borak and R. Lenk. —p. 71.
Disturbances of Conduction in the Bundle. D. Scherf and C. Shookhoff. —p. 97.
*Pathology of Respiratory Metabolism. Pollitzer and Stolz.—p. 137.

Chondrodystrophic Dwarfs.—Donath and Vogl studied the spine in chondrodystrophic dwarfs. It never is normal. Apart from the well known lumbosacral saddle deformity, there are constantly malformations of the dorsolumbar region. Changes of the twelfth thoracic to the third lumbar vertebrae account for these deformities.

Leukocytosis in Man and Dog.—Woronoff and Riskin found in healthy fasting men and dogs during the day changes of leukocytes amounting to 90-150 per cent. There is no definite alimentary leukocytosis, but the number of the cells increases about the time of the expected meal.

Dehydrocholeic Acid in Cholangeitis.—Adlersberg and Neubauer utilized clinically the strong increase of bile secretion after intravenous injections of 2 gm. of the sodium salt of dehydrocholeic acid. They gained a favorable impression in cholecystitis and cholangeitis.

Pathology of Respiratory Metabolism.—Pollitzer and Stolz found that an intramuscular injection of 2 c.c. of a 5 per cent. solution of casein increases the oxygen consumption in the same individual, regardless of fever, about as much as the ingestion of 250 gm. of meat. The maximum of the parenteral reaction is reached in eight hours, of the enteral in four hours.

Wiener klinische Wochenschrift, Vienna

38: 499-524 (May 7) 1925

*Etiology of Herpes Zoster and Chickenpox. B. Lipschütz and K. Kundratitz.—p. 499.
*Irradiation in Ovarian Insufficiency. A. Szenes and J. Palugyay.—p. 503.
*Diagnosis of True Influenza. G. Spengler.—p. 507.
*Emphysema in Pulmonary Tuberculosis. E. Pick.—p. 508.
Late Results of Gastro-Enterostomy in Ulcerations of Stomach and Duodenum. H. Lehmann.—p. 509.
Zittmann's Decoctum. M. Biach.—p. 511.
Nursing in Austria. L. Moszkowicz.—p. 511.
Exophthalmic Goiter. H. Schlesinger.—p. 513.
Asphyxia of Tissues and Dystrophia of Kidneys. L. Jehle. Supplement. —pp. 1-23.

Etiology of Herpes Zoster and Chickenpox.—Lipschütz succeeded in 1920 in inoculating the rabbit cornea with the contents of vesicles of herpes zoster. The cytologic changes ("zoster bodies") were identical. Kundratitz showed that children up to the age of 5 could be inoculated with herpes zoster. The incubation was nine to fifteen days. Some of the patients had a generalized eruption with all the earmarks of chickenpox. Other children who came into contact with them contracted chickenpox. Serum from convalescents from zoster protected against chickenpox. It seems, therefore, that the relation between the two diseases is close. Febrile herpes is probably a different infection.

Irradiation of Pituitary Region in Ovarian Insufficiency.—Szenes and Palugyay report fair results in thirty-eight patients with climacteric disturbances. Great caution is necessary with the dosage.

Diagnosis of True Influenza.—Spengler emphasizes the diagnostic value of leukopenia in grave influenza.

Emphysema of Skin and Mediastinum in Pulmonary Tuberculosis.—The emphysema occurred in a patient with artificial pneumothorax, and was due to rupture of a tuberculous cavity.

Zeitschrift für Kinderheilkunde, Berlin

39: 367-463 (May 22) 1925

Size of Tonsils in Children. M. Schönberger.—p. 367.
Hypertrophied Tonsils in Infants and Children. C. Pirquet.—p. 372.
Experimental Transmission of Herpes Zoster to Man and Its Relation to Chickenpox. K. Kundratitz.—p. 379.
*Experimental Treatment with Bacteriophage. Munter and Boenheim.—p. 388.
Antirachitic Properties Imparted to Inert Fluids and Vegetables by Ultraviolet Irradiation. A. F. Hess.—p. 395.
Immunization of Children Susceptible to Diphtheria. J. Müller and H. Meyer.—p. 405.
Proteus Meningitis in an Infant. Bischoff and Brekenfeld.—p. 421.
*Treatment of Measles with Beef Serum. Nobel and Schönberger.—p. 434.
Skin Sensitiveness to Tuberculin and Protein. E. Nobel and A. Rosenblüth.—p. 439.
Age Incidence of Eczematous Conjunctivitis. I. Krasso.—p. 448.
Treatment of Encysted Pleural Empyema. W. Koelzer.—p. 456.
*Lymphangitis After Tuberculin Test. K. Parrhysius.—p. 460.
Percutaneous Hormone Treatment in Rickets and Spasmophilia. H. Buschmann.—p. 462.

Experimental Treatment with Bacteriophage.—Munter and Boenheim noted improvement in certain cases of colon bacillus cystitis in children and dysentery in infants and young children after this method of treatment. The improvement, however, could not usually be definitely ascribed to a direct curative action of the bacteriophage, partly because the infectious agents proved lysoresistant in vitro, partly because of the probability of spontaneous convalescence. The possibility of a curative effect from the bacteriophage, if only indirect, and the apparent harmlessness of the lysin seem to justify further experiments with bacteriophage therapy.

Treatment of Measles with Beef Serum.—Nobel and Schönberger conclude that attenuation of beginning measles by the injection of beef serum is uncertain. Even the inactivated serum may cause toxic disturbances in children, and beef serum sickness occurs as well as horse serum sickness. They consider the use of beef serum in children contraindicated.

Lymphangitis After Tuberculin Test.—After the intracutaneous injection of tuberculin in diagnosis in three children, Parrhysius noted the appearance of a lymphangitis simultaneously with the pronounced skin reaction. Cultural and microscopic examination of the tuberculin revealed gram-positive diplococci. The cause of the contamination, he says, was defective corking.

Zeitschrift für Krebsforschung, Berlin

22: 199-304 (April 18) 1925

*Action of Roentgen Rays on Plants. H. Komuro.—p. 199.
Suprarenals and Growth of Tumors. H. Auler.—p. 210.
Mixed Embryonal Tumors. A. J. Smirnowa-Zamkowa.—p. 218.
Stimulation of Growth of Connective Tissue. O. Lasius.—p. 233.
*Maturity of Cancer and Cell Division. J. Palugyay.—p. 251.
*Surface Tension of Serum in Pregnancy and Cancer. Solowiew.—p. 265.
*Reaction of Sarcoma to Foreign Body. W. Garschin.—p. 270.
*Early Appearance of Tar Cancer in Rabbits' Ears. Bittmann.—p. 278.
*Atypical Cell Proliferation in Plants. Bittmann.—p. 291.
*Cancer After Inoculation with Bacteria. Blumenthal and Auler.—p. 297.
Propagation of Probable Cancer Germs. Abramowski.—p. 301.

Action of Roentgen Rays on Plants.—Komuro irradiated seeds and young plants of *Vicia faba*. Soft roentgen rays had a much stronger action than hard ones. Changes of nuclei and of the cell division appeared immediately. Tumors were also produced.

Maturity of Cancer and Cell Division.—Palugyay made cytologic studies on uterine cancers. He found that cancers which have the aspect of very little differentiated tissue, show many prophases and few mitoses. Cancers of average maturity have few prophases and many mitoses. Well differentiated cancers show few signs of division. He believes that the prophases are in reality only abortive divisions.

Surface Tension of Serum in Pregnancy and Cancer.—Solowiew found on the average a lower surface tension of the serum in pregnancy and cancer than in the controls.

Reaction of Sarcoma to Foreign Body.—Garschin introduced kieselguhr into the genital sarcomas of dogs. It produced no reaction in the cells. Only the stroma of the tumor reacted slightly. This indicates that these tumors are not a granulation tissue.

Early Appearance of Tar Cancer in Rabbits' Ears.—Bittmann attributes the rapidity of the appearance of cancer on rabbits' ears (in two to six weeks) to the preliminary removal of fat by petroleum ether before the application of the tar.

Production of Atypical Cell Proliferation in Plants.—Bittmann produced on segments of root vegetables a transplantable proliferation of cells—by daily application of 1 per cent. lactic acid. No tumefaciens bacilli were present.

Cancer After Inoculation with P. M. Strain of Bacteria.—Blumenthal and Auler publish pictures of a squamous cell cancer which they produced in two mice by intraperitoneal injection of a pure culture of their bacterial strain P. M. The tumors took at first on transplantation, but disappeared later.

Zeitschrift für Urologie, Leipzig

19: 321-400, 1925

*Tuberculosis of the Kidneys. P. Blatt.—p. 321.
*Anatomy and Physiology of Kidney Pelvis. H. Haebler.—p. 332.
*Autohemotherapy in Gonorrhea. M. A. Saigrajeff.—p. 339.
*Schramm's Phenomenon. O. A. Schwarz.—p. 350.
Vaccine Treatment of Gonorrhea. A. Heymann.—p. 355.
*Retention of Urine in Urethral Stricture. Goldberg.—p. 359.

Tuberculosis of the Kidneys.—Blatt reports on thirty operative cases with after-examination in one and a half to four and a half years, and complete recovery in twenty cases.

Anatomy and Physiology of Kidney Pelvis.—Haebler found an extremely fine, plexus-like penetration of the muscle layers with nerve fibers. Occasionally there appeared isolated, non-medullated filaments, scattered over several muscle layers. In pure muscle fasciculi, without connective tissue, no nerve fibers were observed. No ganglion cells of the sympathetic type were disclosed in the upper third of the ureter wall. Small round or oval black formations in deeper layers of the wall of the kidney pelvis were not ganglion cells but Schwann's nuclei.

Autohemotherapy in Gonorrhea.—Saigrajeff reports on forty cases treated by this safe and painless method. The effective primary dose is 3 c.c. subcutaneously or 5 c.c. intramuscularly, the interval between injections, two to four days. In epididymitis, the treatment with own blood may reduce to twenty-four hours the time of confinement to bed.

Diagnostic Value of Schramm's Phenomenon.—Schramm pointed to the visibility in the cystoscope, in certain cases, of part of the posterior urethra or its whole course over the verumontanum to the external sphincter. He observed this phenomenon only in patients with demonstrable spinal cord disease or with a history of injury of the spinal column or cord. Schwarz says that cases with micturition disturbances of indefinite nature and no findings on urologic examination, beyond Schramm's phenomenon, are perplexing. Whether a gaping sphincter is always a sign of paralysis of the muscles of the pelvic floor (Schramm) is a question. He confirms that Schramm's phenomenon frequently affords a valuable indication of the existence of a spinal affection. When the phenomenon appears, thorough urologic examination should be made.

Retention of Urine Due to Complications of Urethral Stricture.—From four observations of retention of urine in diabetes and four in diabetes with urethral stricture, Goldberg concludes that diabetics with marked strangury, especially at night, should be catheterized, in order that retention of urine, curable in the beginning, may not be overlooked.

Zentralblatt für Gynäkologie, Leipzig

49: 1010-1056 (May 9) 1925

*Legalizing Artificial Abortion. G. Winter.—p. 1010.
*So-Called Stimulating Irradiation of Ovary. F. C. Geller.—p. 1013.
*Dermatoses in Disturbances of Ovarian Function. P. Szegö.—p. 1018.
*Intraspinal Anesthesia in Gynecology. Mandelbaum.—p. 1023.
*Development of Shoulder in Pelvic Presentation. Döderlein.—p. 1027.
Intra-Uterine Interventions in Third Stage of Labor. F. Jess.—p. 1030.
Conception with Intact Hymen. C. W. Bischoff.—p. 1034.
Artificially Lengthened Fingers for Gynecologist. v. Ott.—p. 1035.
*Measurement of Pelvic Inclination. Mandelstamm.—p. 1036.
Improved Vaginal Speculum. J. Dreyer.—p. 1039.
Intraspinal Anesthesia in Gynecology. M. Seidler.—p. 1040.
Extraperitoneal Vaginal "Small" Cesarean Section. Leibtschik.—p. 1044.

Legalizing Artificial Abortion.—Winter says that the paragraph on abortion in the draft of the new German penal code, admitting interruption of pregnancy in cases of a "present" menace to life, does not cover the indications now recognized by the profession. He pleads for an addition to the paragraph which will in unmistakable terms exculpate the physician who acts according to the accepted standards of the profession. He would not legalize induced abortion after rape, because of the extreme difficulty in establishing the rape.

So-Called Stimulating Irradiation of the Ovary.—Geller states that after weak irradiation of the ovary in rabbits the histologic picture showed no certain signs of a stimulation, but in almost every case degenerative changes were evident in the ova and follicles in all stages, without manifest or regular predilection for the ripe follicles.

Dermatoses in Disturbances of Ovarian Function.—In over eighty patients with various dermatoses, Szegö found indications of functional disturbance of the ovaries (pregnancy, amenorrhea after excision or roentgen treatment or without known cause, dysmenorrhea, oligomenorrhea, etc.). Ovarian extract was given, intravenously or intramuscularly. Improvement was usually manifest after the second or third injection. A connection between the dermatosis and the ovarian disturbance is probable, he says, if the constitution suggests impaired ovarian function; if the two conditions appear simultaneously; if the dermatosis retrogresses after treatment with ovarian extract; and if on discontinuation of the treatment and aggravation of the ovarian condition, the dermatosis also becomes more marked.

Intraspinal Anesthesia in Gynecology.—Mandelbaum concludes that this is not a fully competent substitute for inhalation anesthesia. The method is generally better borne by elderly than by young women. More sharply defined indications for it are needed. He considers the age above 60 as an indication. General anesthesia is more easily reversible

than intraspinal; the advantage of the earliest possible removal of a poison from the organism is emphasized. He quotes Bumm: "The loss of consciousness at the beginning of anesthesia is a boon to women."

Development of Shoulder Girdle in Breech Presentation.—Döderlein says that, besides saving time, A. Mueller's method reduces the number of injuries to the humerus and clavicle. He points to infrequent but grave injuries to the infant's skeleton which may result from it. In one instance necropsy revealed the right clavicle dislocated, behind the sternum. The head of the bone had penetrated the tissues of the anterior mediastinum and pressed on the superior vena cava. Numerous extravasations indicated death from suffocation. He advises against forced development of the shoulder by traction on the breech. If extraction according to Mueller proves difficult, manual development of the arm affords a better outlook.

Measurement of Pelvic Inclination.—Special study of the etiology and treatment of genital prolapse has convinced Mandelstamm that slight pelvic inclination produces a tendency to retroversion, and that this creates preliminary conditions for genital ptosis on increased abdominal pressure. In patients thus affected, other signs of asthenia were also present. In women with infantile or partial development and extensive perineal tears (prolapse of the posterior vaginal wall), there was a pronounced slant of the pelvis, but marked prolapse of the genitals was rarer, and the uterus tended to anteversion. He describes his apparatus for measurement of the pelvic inclination.

Acta Scholae Medicinalis Univ., Kioto

6: 275-403, 1924. English-German Edition

Bone Transplantation and Vital Staining. B. Ogawa.—p. 275.
Photographing Minimal Changes in Pressure and Volume. K. Mori.—p. 327.
Loewe Heart Strips. II. S. Ueda.—p. 333. III.—p. 359.
*Nonsurgical Measurement of Blood Pressure. Kuraya.—p. 373.
*Bile Outflow as Symptom of Disease. K. Nakashima.—p. 389.

Nonsurgical Measurement of Blood Pressure in Rabbit.—Kuraya places the inner surface of a rabbit's ear directly under a glass plate, the external surface in contact with a rubber drum, connected by rubber tubing with a manometer. The drum consists of a thin rubber sheet stretched loosely over a funnel-shaped metal cup opening into a rubber tube with bulb. An electric lamp at the bottom of the cup allows observation of the blood stream through the glass plate, ear tissue, and rubber membrane.

Bile Outflow as Symptom of Disease of Biliary Tract.—Nakashima says that if the affection is mild, a dark, brownish-greenish bile appears at the beginning of the bile outflow or after the discharge of a little pale bile. It contains a small quantity of floccules of mucus, epithelium, and other pathologic elements, and varies in amount from 20 to 80 c.c. It is soon followed by pale bile. In cases of a severe affection the dark-colored bile alternates with the pale in intervals varying from fifteen to seventy-five minutes. The severer the affection, the shorter the interval. The symptom, he says, is caused by inflammation, dilatation of the ducts, and probably insufficiency of the sphincter of Oddi. With decreasing intervals and aggravation of the patient's condition, he advises removal of the gallbladder; with increasing intervals, the duodenal tube.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1989-2104 (May 2) 1925

*Stasis in the Blood in Inflammation. J. H. Regenbogen.—p. 1990.
*Pregnancy Toxicosis. J. C. Beker.—p. 2008.
Allen's Research on Ovarian Secretion. G. C. Nijhoff.—p. 2015.
Case of Encephalitis After Vaccination. J. R. Prakken.—p. 2018.
A Valuable Medical Incunabulum. Nuyens.—p. 2021.

Causes of Stasis in Inflamed Blood Vessels.—Regenbogen presents evidence that an abnormal ratio between the p_H of the blood and the vessel wall is responsible for the stasis in inflammatory conditions. All the phenomena of inflammation, he reiterates, are of a defensive nature—to wall in the focus—and of a reversible character, and are induced by the hydrogen ions generated in the necrotic tissues. Stasis can be arrested by measures to render the blood more fluid, or by measures to restore the p_H to normal figures.

Pregnancy Toxicosis.—Beker describes some cases which seem to explain pregnancy toxicosis, edema, nephritis and eclampsia as the result of disturbance in the blood circulation owing to the loss of balance between the blood circulating in the uterus and in its environment. A second important factor is the toxic substances generated as the products of the metabolism of the uterus musculature.

1: 2105-2204 (May 9) 1925

*Pseudomyxoma of the Peritoneum. T. S. Klots.—p. 2112.
Wassermann's Seroreaction in Tuberculosis. van der Hoeden.—p. 2125.
Tuberculin as Cell Stimulus. H. Verploegh.—p. 2129.
Grave Lead Poisoning, Probably from Water Tank. Bahlmann.—p. 2138.
Recurring Puerperal Inversion of Uterus. Kamberg and Bol.—p. 2141.
*Rolling of Eyeballs in Old Syphilis. S. P. Bakker.—p. 2148.

Pseudomyxoma of the Peritoneum.—Klots urges prompt and repeated operations, reporting a case and saying that the prognosis is not so grave as hitherto taught. Even if a permanent cure is not possible, life can be lengthened for many years. In his patient, the recurrence was in one week, the abdomen much enlarged anew, but clinically normal conditions were restored by the second operation (while the woman was under observation).

Ocular Spasm with Syphilitic Affection Resembling Shaking Palsy.—Bakker's patient noted the parkinsonian symptoms ten years after syphilis infection, well treated at the time and five years later. Then came attacks of rolling up of the eyeballs. There was no history of epidemic encephalitis. Ewald noted this ocular spasm as a sequel of epidemic encephalitis in five cases and of paratyphoid encephalitis in another. Gowers encountered it in a case of Wilson's disease. Bakker comments that these cases show that the lesions in the midbrain of epidemic encephalitis may extend to the adjoining center controlling the upward normal movements of the eye. In sleep, the eyeballs roll up.

Finska Läkaresällskapets Handlingar, Helsingfors

67: 303-397 (April) 1925

*Autovaccine Treatment of Septicemia. E. Ryti and F. Saltzman.—p. 303.
The Physician and Compulsory Accident Insurance. B. Lönnqvist.—p. 327.
*Tuberculosis Statistics. N. Emeleus.—p. 347.
Reliability of Wassermann Test. G. Snellman.—p. 355.

Autovaccine Treatment of Septicemia, Particularly Streptococcus Septicemia.—Ryti and Saltzman injected the autogenous vaccine subcutaneously every second day (occasionally, after a pronounced reaction, every third day) in gradually increasing doses. While only fourteen cases were treated, the results of the treatment, combined with serumtherapy in the most acute cases, appeared favorable. In three of the six fatal cases other grave disorders were present besides the acute septicemia.

New Tuberculosis Statistics.—Emeleus found in 1924 that of the 1,438 employees of a Tammersfors factory living in model homes owned by the company, 4.6 per cent. had tuberculosis; of the 917 living elsewhere in the city, 6.5 per cent. In 1908, 9.24 per cent. of the 1916 workingmen examined were tuberculous.

Norsk Magazin for Lægevidenskaben, Oslo

86: 429-524 (May) 1925

Fifty-Three Operated Cases of Kidney and Ureter Calculi. P. Bull.—p. 429.
Roentgenograms in Diagnosis of Kidney and Ureter Calculi. S. A. Heyerdahl.—p. 459.
Bacillus Mesentericus Vulgatus Found in Abscess from Therapeutic Injection. E. Gundersen and E. Ziesler, Jr.—p. 473.
*Diphtheroid Rods in Blood in Intermittent Fever. E. Gundersen.—p. 477.
Insulin in General Practice. H. C. Geelmuyden.—p. 482.

Diphtheroid Rods in Blood in Fever of Unknown Origin.—The first of Gundersen's three cases of remittent fever began with a rhinitis and lasted two months, with gradual recovery. In the second, with onset following an injury to the nose, and no indication of malignant tumor or tuberculosis, death occurred in a cachectic condition two months later. The third patient, in a septic condition, with signs of endocarditis, died after two and a half weeks. In every case corynebacterium xerosis was cultivated from the blood.